Chowan River and Dismal Swamp Basins

Cause Group Code: K01R-01-BAC Middle Meherrin River

Cause Location: Middle Meherrin River from its headwaters to mouth.

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

The Middle Meherrin River from Crupper Run to its mouth was first impaired for the Recreation Use in the 2004 cycle due to a fecal coliform exceedance rate of 2/19 at 5AMMR000.69. It converted to E. coli in the 2010 cycle. The segment was extended upstream during the 2014 cycle due to E. coli exceedance rates of 3/12 at 5AMMR000.69 and 2/12 at 5AMMR008.77.

The impairment was nested in the Meherrin River and Tributaries Bacterial TMDL, which was approved by the EPA on 04/12/2010 and by the SWCB on 9/30/2010.

During the 2018 cycle, the exceedance rate at 5AMMR008.77 was 2/12; additional monitoring at 5AMMR015.22 showed an exceedance rate of 4/12.

During the 2020 cycle the segment remained impaired for E.coli with an exceedance rate of 3/12 at station 5AMMR000.69.

Assessment Unit / Water Na	ame / Location Desc.	Caus Catego	e ory Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K01R_MMR01A98 / Middle mouth	Meherrin River / Crupper Run	to 4A	Escherichia coli (E. coli)		2010	L	7.15
VAP-K01R_MMR02A08 / Middle River from its headwaters to its co		rrin 4A	Escherichia coli (E. coli)		2014	L	11.25
Middle Meherrin River Recreation				Estuary (Sq. Miles)		servoir cres)	River (Miles)
Escherichia coli (E. coli) - Total Impaired Size by Water Type:						18.40	
Sources:							

Chowan River and Dismal Swamp Basins

Cause Group Code: K01R-01-BEN Middle Meherrin River

Cause Location: Middle Meherrin River from its headwaters to its confluence with Crupper Run.

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

The Middle Meherrin River from its headwaters to Crupper Run was initially impaired of the Aquatic Life Use in the 2014 cycle due to an altered benthic community at freshwater probabilistic monitoring station 5AMMR008.77. The BMI community in this reach is dominated by the filterer FFG which indicates nutrient enrichment. Habitat scores for sediment were also low suggesting another probable stressor.

The station is located on private property; therefore, sampling continued at new station 5AMMR014.21 in the 2018 cycle instead; monitoring there was inconclusive.

During the 2020 cycle the segment remained impaired for benthics with new data collected in 2018 at station 5AMMR008.77.

	ause egory Cause Name	First Dev. Listed Priority	Water Size
VAP-K01R_MMR02A08 / Middle Meherrin River / Middle Meherrin River from its headwaters to its confluence with Crupper Run	5A Benthic Macroinvertebrates Bioassessments	2014 M	11.25
Middle Meherrin River Aquatic Life	Estuary (Sq. Mile		River (Miles)
Benthic Macroinvertebrates Bioassessments - Total Impa	aired Size by Water Type:		11.25

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K01R-03-BEN Finneywood Creek

Cause Location: Finneywood Creek from its headwaters to its mouth on the South Meherrin River

City / County: Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

During the 2008 cycle, Finneywood Creek was impaired of the Aquatic Life Use due to an altered benthic community at 5AFNY004.78, which was a 2005 Probmon site.

The stream runs through a pasture with active cattle access. Flow was minimal, sedimentation was extensive, and organic solids were abundant in channel. Minimal habitat was present.

During the 2020 cycle no new data was collected.

Cause Assessment Unit / Water Name / Location Desc. Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K01R_FNY01A08 / Finneywood Creek / Finneywood Creek 5A Benthic Macroinve 5A Benthic Macroinve 5A Bioassessments	ertebrates	2008	M	5.11
Finneywood Creek Aquatic Life	Estuary (Sq. Miles)		servoir cres)	River (Miles)
Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:				

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K01R-04-BEN Blackstone Creek

Cause Location: Blackstone Creek from its headwaters to its mouth

City / County: Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

Blackstone Creek was impaired of the Aquatic Life Use in the 2018 cycle due to an altered benthic community at 5ABKS001.60.

During the 2020 cycle no new data was collected.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K01R_BKS01A16 / Blackstone Creek / Blackstone Creek from its headwaters to its mouth	5A Benthic Macroinvertebrates Bioassessments	3	2018	L	4.47
Blackstone Creek		Estuary	Res	servoir	River
Aquatic Life	(S	sq. Miles)	(A	cres)	(Miles)
Benthic Macroinvertebrates Bioassessments - Total	Impaired Size by Water Type:				4.47

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins Cause Group Code: K01R-05-BEN Kitts Creek

Cause Location: Kitts Creek from its headwaters to its mouth

City / County: Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

During the 2020 cycle Kitts Creek was impaired for Aquatic Life Use due to an altered benthic community at 5AKTS002.63.

Cause Assessment Unit / Water Name / Location Desc. Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K01R_KTS01A14 / Kits Creek / From its headwaters to the mouth 5A Benthic Macroinvertebra Bioassessments	ites	2020	L	4.75
Kitts Creek Aquatic Life	Estuary (Sq. Miles)		ervoir cres)	River (Miles)
Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:				4.75

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K02R-01-BAC **North Meherrin River**

Cause Location: North Meherrin River from Couches Creek to Reedy Creek.

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2006 cycle, the North Meherrin River from Couches Creek to Reedy Creek was impaired of the Recreation Use due to an E.coli exceedance rate of 2/9 at 5ANMR013.95.

The impairment was addressed in the Meherrin River and Tributaries Bacterial TMDL, which was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010.

It was delisted in 2012 and relisted in 2014.

The exceedance rate was 5/35 in the 2018 cycle.

The segment was mistakenly listed as nested in previous assessments. This was corrected in the 2018 cycle. The impairment is Category 4A.

During the 2020 cycle the segment remained impaired for E.coli at station 5ANMR013.95 with an exceedance rate of 4/34.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K02R_NMR01A98 / North Meherrin River / Couches Cree Reedy Creek.	k to 4A Escherichia coli (E. coli)	1	2014	L	7.54
North Meherrin River Recreation		Estuary (Sq. Miles)		servoir cres)	River (Miles)
Escherichia coli (E. coli) - Total Impaired Size by Water Type:					
Sources:					

Waterfowl

Livestock (Grazing or Feeding Operations)	Municipal Point Source Discharges	Unspecified Domestic Waste	Wastes from Pets
Wildlife Other than			

Chowan River and Dismal Swamp Basins

Cause Group Code: K02R-01-BEN North Meherrin River

Cause Location: North Meherrin River from Couches Creek to unnamed tributary below unimproved road.

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

In the 2010 cycle, the North Meherrin River from Couches Creek to Reedy Creek was impaired of the Aquatic Life Use due to an altered benthic community at 5ANMR013.95 during 2008 sampling. This section of the North Meherrin River had incised banks and a high rate of sedimentation. Cobble surfaces in riffles were dominated by periphyton.

The impairment was extended downstream to an unnamed tributary in the 2014 cycle based on additional monitoring at 5ANMR007.90.

Assessment Unit / Water Name / Location Desc.	Caus Catego	e ory Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K02R_NMR01A98 / North Meherrin River / Couches Creek to Reedy Creek.	5A	Benthic Macroinvertebrate Bioassessments	es	2010	L	7.54
VAP-K02R_NMR02B04 / North Meherrin River / Confluence with Reedy Creek to unnamed tributary below unimproved road.	5A	Benthic Macroinvertebrate Bioassessments	es	2014	L	2.63
North Meherrin River Aquatic Life		(Estuary Sq. Miles)		servoir cres)	River (Miles)
Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:					10.17	

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K02R-02-BAC Big Juniper Creek

Cause Location: Big Juniper Creek from Little Juniper Creek to the mouth.

City / County: Lunenberg Co.

Use(s): Recreation

Sources:

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

In the 2006 cycle, Big Juniper Creek was impaired of the Recreation Use due to an E. coli exceedance rate of 2/9 at

5ABJC001.00.

In the 2014 cycle, the impairment was nested in the Meherrin River and Tributaries Bacterial TMDL, which was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010.

The exceedance rate was 5/12 in the 2018 cycle. During the 2020 cycle no new data was collected.

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAP-K02R_BJC01A98 / Big Juniper Creek / Little Juniper Creek to 4A Escherichia coli (E. coli) 2006 L 6.68

mouth.

Big Juniper Creek

Recreation

Reservoir River
(Sq. Miles) (Acres) (Miles)

6.68

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Livestock (Grazing or Unspecified Domestic Wastes from Pets Wildlife Other than Feeding Operations) Waste Wastes

Chowan River and Dismal Swamp Basins Cause Group Code: K02R-03-BAC

Cause Location: Kits Creek from its headwaters to the mouth

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2018 cycle, Kits Creek was impaired of the Recreation Use due to an E. coli exceedance rate of 2/3 at 5AKIT002.65. The exceedance rate at 5AKIT000.67 is acceptable (0/12); therefore, continued monitoring is recommended.

The impairment is proposed for nesting in the North Meherrin River Bacterial TMDL, which was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010.

During the 2020 cycle no new data was collected.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		Cycle First _isted	TMDL Dev. Priority	Water Size
VAP-K02R_KIT01A06 / Kits Creek / Kits Creek from its headwaters to the mouth	4A Escherichia coli (E. coli)		2018	L	4.82
Kits Creek		Estuary		servoir	River
Recreation		(Sq. Miles)	(A	.cres)	(Miles)

(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

4.82

Sources:

Municipal Point Source Discharges

Non-Point Source

Chowan River and Dismal Swamp Basins Cause Group Code: K02R-03-BEN Kits Creek

Cause Location: Kits Creek from its headwaters to the mouth

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

Kits Creek was impaired of the Aquatic Life Use in the 2008 cycle due to an altered benthic community at 5AKIT002.65.

Monitoring at station 5AKIT000.67 is inconclusive.

During the 2020 cycle the segment remained impaired for benthics at both stations.

	Cause ategory Cause Name	Cycle TMDL First Dev. Listed Priority	Water
VAP-K02R_KIT01A06 / Kits Creek / Kits Creek from its headwaters to the mouth	5A Benthic Macroinvertebrates Bioassessments	2008 L	4.82
Kits Creek Aquatic Life	Estuar (Sq. Mile	•	River (Miles)
Benthic Macroinvertebrates Bioassessments - Total Im	paired Size by Water Type:		4.82

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K02R-04-BAC Reedy Creek

Cause Location: Reedy Creek from its headwaters to its mouth on the North Meherrin River

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2008 cycle, Reedy Creek was impaired of the Recreation Use due to an E. coli exceedance rate of 3/9 at

5ARYK002.34.

The impairment was subsequently nested in the Meherrin River and Tributaries Bacterial TMDL, which was approved by the

EPA on 4/12/2010 and by the SWCB on 9/30/2010.

The exceedance rate was 2/12 in the 2018 cycle.

During the 2020 cycle no new data was collected.

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAP-K02R_RYK01A08 / Reedy Creek / Reedy Creek from its 4A Escherichia coli (E. coli) 2008 L 10.40

headwaters to its mouth on the North Meherrin River

Reedy Creek
Recreation

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

10.40

Sources:

Livestock (Grazing or Feeding Operations) Wildlife Other than

Waterfowl

Municipal Point Source Discharges Unspecified Domestic Waste

Wastes from Pets

Final 2020

Chowan River and Dismal Swamp Basins

Cause Group Code: K02R-04-BEN Couches Creek

Cause Location: Couches Creek from its headwaters to its mouth on the North Meherrin River

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

Couches Creek has been impaired of the Aquatic Life Use since the 2010 cycle due to altered benthic communities at

5ACHS003.42 and 5ACHS006.33.

During the 2020 cycle both stations remain impaired for Benthics.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause I		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K02R_CHS01A08 / Couches Creek / Couches Creek from headwaters to its mouth on the North Meherrin River	n its 5A Benthic Ma Bioassessr		2010	L	7.37
Couches Creek Aquatic Life		Estuary (Sq. Miles)		ervoir cres)	River (Miles)
Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:					7.37

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K02R-05-BAC Ledbetter Creek

Cause Location: Ledbetter Creek from its headwaters to its mouth.

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

In the 2010 cycle, Ledbetter Creek was impaired of the Recreation Use due to an E. coli exceedance rate of 8/12 at

5ALDB000.03.

The impairment was later nested in the Meherrin River and Tributaries Bacterial TMDL, which was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010.

The exceedance rate was 8/12 in the 2018 cycle.

During the 2020 cycle no new data was collected.

Cause Assessment Unit / Water Name / Location Desc. Cause Category Cause Name		First Listed	Dev. Priority	Water Size
VAP-K02R_LDB01A10 / Ledbetter Creek / Ledbetter Creek from 4A Escherichia coli (E. coli) its headwaters to its mouth.		2010	L	9.08
Ledbetter Creek	Estuary	Res	ervoir	River
Recreation	(Sq. Miles)	(Ac	cres)	(Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

9.08

Cycle TMDI

Sources:

Livestock (Grazing or Unspecified Domestic Wastes from Pets Wildlife Other than Feeding Operations) Waste Wastes from Pets Waterfowl

Chowan River and Dismal Swamp Basins

Cause Group Code: K02R-06-BAC Couches Creek

Cause Location: Couches Creek from its headwaters to its mouth on the North Meherrin River.

City / County: Lunenberg Co.

Use(s): Recreation

Waterfowl

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

In the 2014 cycle, Couches Creek was impaired of the Recreation Use due to an E. coli exceedance rate of 4/12 at

5ACHS003.42.

The impairment was nested in the North Meherrin River Bacterial TMDL, which was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010.

The exceedance rate remained 4/12 in the 2018 cycle.

During the 2020 cycle the segment remained impaired for E.coli with an exceedance rate of 3/12 at station 5ACHS003.42.

Sources:	Escriencina con (E. con) -		.			7.37
	Escharichia cali (E. cali)	Total Impaired Size by Water Type:				7.37
Recreation			(Sq. Miles)	(A	cres)	(Miles)
Couches Creek			Estuary		servoir	River
VAP-K02R_CHS01A08 / Coneadwaters to its mouth on the	uches Creek / Couches Creek e North Meherrin River	from its 4A Escherichia coli (E. coli)	2	2014	L	7.37
Assessment Unit / Wate	r Name / Location Desc.	Category Cause Name	L	isted	Priority	Size
		Cause	_	First	Dev.	Water
	N		Ī			

Livestock (Grazing or Feeding Operations)

Municipal Point Source Unspecified Domestic Wastes from Pets Waste

Wastes

Chowan River and Dismal Swamp Basins

Cause Group Code: K02R-07-BAC Little Tussekiah Creek

Cause Location: Headwaters to the mouth

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

NESTED 2020: 38418, 4/12/2010

In the 2020 cycle, Little Tussekiah Creek was impaired of the Recreation Use due to an E. coli exceedance rate of 2/12 at 5ALLT000.32. The impairment was nested in the Meherrin River and Tributaries Bacterial TMDL, which was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Ī	Cycle TMDL First Dev. isted Priority	Water Size
$\label{lem:VAP-K02R_LLT01C20} \mbox{$/$ Little Tussekiah Creek / Headwaters the mouth}$	to 4A Escherichia coli (E. coli	2	2020 L	1.81
Little Tussekiah Creek Recreation		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli (E. coli) - To	tal Impaired Size by Water Type:			1.81

Sources:

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K02R-08-BAC North Meherrin River

Cause Location: Confluence with Spring Creek to the confluence with Ledbetter Creek

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

NESTED 2020: 38418, 4/12/2010

In the 2020 cycle, North Meherrin River was impaired of the Recreation Use due to an E. coli exceedance rate of 2/12 at 5ANMR024.14. The impairment was later nested in the Meherrin River and Tributaries Bacterial TMDL, which was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010.

Cause Assessment Unit / Water Name / Location Desc. Cause Category	Cyc Fir Cause Name List	st Dev.	Water Size
VAP-K02R_NMR01C20 / North Meherrin River / Confluence with 4A Es Spring Creek to the confluence with Ledbetter Creek	scherichia coli (E. coli) 20	20 L	0.58
North Meherrin River	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli (E. coli) - Total Impaired Si	ze by Water Type:	,	0.58

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K03R-01-BAC Flat Rock Creek

Cause Location: Flat Rock from the first confluence downstream of the Route 647 bridge downstream to the mouth.

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2002 cycle, Flat Rock Creek from the first confluence downstream of the Route 647 bridge downstream to the mouth was impaired of the Recreation Use due to fecal coliform exceedances at 5AFRC002.98. The impairment converted to E. coli in the 2008 cycle. The Flat Rock Creek and Broad Branch Bacterial TMDL was approved by the EPA on 12/29/2008 and by the SWCB on 4/28/2009.

Station 5AFRC007.54 later had E. coli exceedances as well.

The segment extent was mistakenly altered and the downstream most portion was delisted in previous cycles. As of the 2016 cycle, a merged impairment (VAC-K03R-01 and VAC-K03R-02) extended from the headwaters to Kettlesticks Creek. The segmentation was corrected in the 2018 cycle and the applicable portions were nested.

During the 2018 cycle, the E. coli exceedance rate was 2/12 at 5AFRC002.98.

During the 2020 cycle no new data was collected.

Assessment Unit	/	Water Name	1	Location Desc	

Cause Category Cause Name

Escherichia coli (E. coli)

Cycle TMDL
First Dev. Water
Listed Priority Size
2008 L 9.75

VAP-K03R_FRC01A98 / Flat Rock Creek / First confluence downstream of Route 647 to the mouth.

Segment extent corrected and merged in the 2018 cycle.

Flat Rock Creek

Recreation

Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

9.75

Sources:

Livestock (Grazing or Unspecified Domestic Wastes from Pets Wildlife Other than Feeding Operations) Waste Wastes from Pets Waterfowl

Chowan River and Dismal Swamp Basins

Cause Group Code: K03R-01-BEN Flat Rock Creek

Cause Location: Flat Rock Creek from its headwaters to its mouth.

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

Flat Rock Creek from its headwaters to Kettlesticks Creek was impaired of the Aquatic Life Use in the 2014 cycle due to 2012 monitoring at freshwater probabilistic monitoring station 5AFRC011.93.

Owell TMDI

Additional monitoring at 5AFRC013.25 in 2015 also indicated impairment.

The segment was extended to the mouth in the 2018 cycle.

During the 2020 cycle no new data was collected.

Assessment Unit / Water Name / Location Desc.	Cause Catego	e rry Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K03R_FRC01A98 / Flat Rock Creek / First confluence downstream of Route 647 to the mouth.	5A	Benthic Macroinvertebrat Bioassessments	tes	2014	L	9.75
Segment extent corrected and merged in the 2018 cycle.						
VAP-K03R_FRC01B18 / Flat Rock Creek / Kenbridge WTP intak to the first confluence downstream of the Route 647 bridge	e 5A	Benthic Macroinvertebrat Bioassessments	tes	2014	L	4.69
AU split off in the 2018 cycle to correct segmentation.						
Segment extent corrected and merged in the 2018 cycle.						
VAP-K03R_FRC02A06 / Flat Rock Creek / Route 652 to Kenbridge PWS intake.	5A	Benthic Macroinvertebrat Bioassessments	tes	2014	L	1.73
Segment split in the 2018 cycle.						
VAP-K03R_FRC02B18 / Flat Rock Creek / Headwaters to Route 652.	5A	Benthic Macroinvertebrat Bioassessments	tes	2014	L	3.89
Segment split in the 2018 cycle.						
Flat Rock Creek			Estuary	Res	servoir	River
Aquatic Life			(Sq. Miles)	(A	cres)	(Miles)
Benthic Macroinvertebrates Bioassessments - Total I	mpaire	d Size by Water Type:				20.06

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K03R-02-BAC Flat Rock Creek

Cause Location: Flat Rock Creek from Route 652 downstream to the Kenbridge PWS intake.

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2006 cycle, Flat Rock Creek from the Route 652 bridge downstream to the Kenbridge WTP intake was impaired of the Recreation Use due to an E. coli exceedance rate of 2/3 at 5AFRC013.25. The Flat Rock Creek and Broad Branch Bacterial TMDL, which was approved by the EPA on 12/29/2008 and by the SWCB on 4/28/2009, addressed the original segment.

Note: In the 2008 cycle, the impairment was extended upstream to the headwaters based on an exceedance rate of 4/12 at 5AFRC014.70. In addition, it was mistakenly merged with the bacterial impairment at the mouth of Flat Rock Creek (K03R-01-BAC). In the 2018 cycle, the segmentation was corrected and the upstream extension was split off and nested in the 2018 cycle because the upstream-most impairment was not specifically addressed in the TMDL.

During the 2020 cycle no new data was collected.

		Cycle	HIVIDL	
	Cause	First	Dev.	Water
Assessment Unit / Water Name / Location Desc.	Category Cause Name	Listed	Priority	Size
VAP-K03R_FRC02A06 / Flat Rock Creek / Route 652 to Kenbridge PWS intake.	4A Escherichia coli (E. coli)	2006	L	1.73

Segment split in the 2018 cycle.

Flat Rock Creek		Estuary	Reservoir	River
Recreation		(Sq. Miles)	(Acres)	(Miles)
	Escherichia coli (E. coli) - Total Impaired Size by Water Type	:		1.73

Sources:

Livestock (Grazing or	Unspecified Domestic	Wastes from Pets	Wildlife Other than
Feeding Operations)	Waste		Waterfowl

Chowan River and Dismal Swamp Basins

Cause Group Code: K03R-03-BAC Broad Branch

Cause Location: Broad Branch from its headwaters to the mouth.

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Broad Branch was initially impaired of the Recreation Use in the 2006 cycle based on an E. coli exceedance rate of 2/3 at

5ABRD002.09.

Additional monitoring was later conducted.

The Flat Rock Creek and Broad Branch Bacterial TMDL was approved by the EPA on 12/29/2008 and by the SWCB on

4/28/2009.

During the 2020 cycle no new data was collected.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	First List		Water Size
$\ensuremath{VAP\text{-K03R_BRD01A06}}$ / Broad Branch / From its headwaters to the mouth	4A Escherichia coli (E. coli)	200	6 L	3.53
Broad Branch			Reservoir	River (Miles)
Broad Branch Recreation		Estuary (Sq. Miles)	Reservoir (Acres)	

(Sq. Miles) (Acres) (Nescherichia coli (E. coli) - Total Impaired Size by Water Type:

Listing in (L. coii) - Total impaired Size by Water Type

3.53

Cycle TMDI

Sources:

Livestock (Grazing or Unspecified Domestic Wastes from Pets Wildlife Other than Feeding Operations) Waste Wastes from Pets Waterfowl

Chowan River and Dismal Swamp Basins

Cause Group Code: K03R-04-BAC Meherrin River

Cause Location: Meherrin River from its confluence with the North Meherrin River to its confluence with Flat Rock Creek.

City / County: Lunenberg Co. Mecklenburg Co.

Use(s): Recreation

Waterfowl

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

NESTED 2014: 38419, 4/12/2010

The Meherrin River from Crooked Creek to Flat Rock Creek was impaired of the Recreation Use in the 2008 cycle due to an E. coli exceedance rate of 3/9 at 5AMHN012.61.

The impairment was extended upstream to the confluence with the North Meherrin River in the 2012 cycle (8/12 at 5AMHN102.61 and 3/14 at 5AMHN108.37.)

It was nested in the Meherrin River and Tributaries Bacterial TMDL in the 2014 cycle. The TMDL was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010.

In the 2018 cycle, exceedance rates in the segment were: 4/12 at 5AMHN102.61 3/12 at 5AMHN105.36 0/1 at 5AMHN104.32

During the 2020 cycle no new data was collected.

Caus Assessment Unit / Water Name / Location Desc. Category	e ory Cause Name	Cycle First Liste	Dev.	Water Size
VAP-K03R_MHN01A00 / Meherrin River / Meherrin River from the South Hill raw water intake to a point 5 miles upstream.	Escherichia coli (E. coli)	2012	L	5.03
VAP-K03R_MHN01B06 / Meherrin River / Meherrin River from the confluence with North Meherrin River to a point 5 miles upstream of the South Hill Intake.	Escherichia coli (E. coli)	2012	L	1.94
VAP-K03R_MHN02A04 / Meherrin River / From South Hill's raw water intake to the confluence with Crooked Creek.	Escherichia coli (E. coli)	2012	L	1.29
VAP-K03R_MHN03A08 / Meherrin River / Meherrin River from its confluence with Crooked Creek to its confluence with Flat Rock Creek.	Escherichia coli (E. coli)	2008	L	3.17
Meherrin River			eservoir	River
Recreation		(Sq. Miles)	(Acres)	(Miles)
Escherichia coli (E. coli) - Total Impaire	d Size by Water Type:			11.43
Sources:				

Livestock (Grazing or Feeding Operations)

Municipal Point Source Unspecified Domestic Wastes from Pets Waste

Wildlife Other than

Chowan River and Dismal Swamp Basins

Cause Group Code: K03R-05-BAC XFH - Flat Rock Creek, UT

Cause Location: An unnamed tributary to Flat Rock Creek from its headwaters to its mouth.

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

NESTED 2014: 36046, 12/29/2008

XFH was impaired of the Recreation Use in the 2008 cycle due to E. coli exceedances at

5AXFH0.74.

In the 2014 cycle, the impairment was nested in the Flat Rock Creek and Broad Branch Bacterial TMDL, which was approved

by the EPA on 12/29/2008 and by the SWCB on 4/28/2009.

Assessment Unit / Water N VAP-K03R_XFH01A06 / XFH		Cause Category Cause Name 4A Escherichia coli (E. coli)	L	Cycle First _isted 2008	TMDL Dev. Priority	Water Size 3.44
Tributary / From its headwaters XFH - Flat Rock Creek, UT	s to the mouth		Estuary	Res	servoir	River
Recreation			(Sq. Miles)		cres)	(Miles)
	Escherichia coli (E. coli) - To	tal Impaired Size by Water Type:				3.44
Sources:						
Livestock (Grazing or	Unspecified Domestic	Wastes from Pets	Wildlife (Other t	han	

Livestock (Grazing or Unspecified Domestic Wastes from Pets Wildlife Other than Feeding Operations) Waste Wastes from Pets Wildlife Other than

Chowan River and Dismal Swamp Basins

Cause Group Code: K03R-06-BEN Mason Creek

Cause Location: Mason Creek from its headwaters to the mouth.

City / County: Lunenberg Co. Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

Masons Creek was impaired in the 2014 cycle due to an altered benthic community at 5AMSC002.30.

This reach may be a future delist candidate due to beaver impacts to the 2011 samples. More recent sampling in 2016 indicate betters habitat though slight nutrient and sedimentation stressors are present. Monitoring should continue to accurately characterize the BMI community in this reach.

Outle TMDI

During the 2020 cycle no new data was collected.

_	Cause atego	e ory Cause Name	First Listed	Dev. Priority	Water Size	
VAP-K03R_MSC01A10 / Mason Creek / Mason Creek from a point 5 miles upstream of PWS intake to its mouth on the Meherrin River.	5A	Benthic Macroinvertebrates Bioassessments	2014	L	2.07	
VAP-K03R_MSC01B14 / Mason Creek / Mason Creek from its headwaters to a point 5 miles upstream of the PWS intake	5A	Benthic Macroinvertebrates Bioassessments	2014	L	5.98	

Segment adjusted in the 2018 cycle.

Mason Creek	Estuary	Reservoir	River
Aquatic Life	(Sq. Miles)	(Acres)	(Miles)
Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:			8.05

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K03R-07-BAC Flat Rock Creek

Cause Location: Flat Rock from the Kenbridge WTP intake downstream to the first confluence below the Route 647 bridge.

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2002 cycle, Flat Rock Creek from the first confluence downstream of the Route 647 bridge downstream to the mouth was impaired of the Recreation Use due to fecal coliform exceedances at 5AFRC002.98. The impairment converted to E. coli in the 2008 cycle. The Flat Rock Creek and Broad Branch Bacterial TMDL was approved by the EPA on 12/29/2008 and by the SWCB on 4/28/2009.

It was mistakenly extended upstream in the 2008 cycle due to an E. coli exceedance rate of 3/12 at 5AFRC009.53 and merged with the upstream impairment K03R-02-BAC. As this portion was first listed in 2008 cycle, the due date should be 2020. The segmentation was corrected in the 2018 cycle. Since this portion was not specifically addressed in the TMDL, it will be nested. During the 2020 cycle no new data was collected.

			Cycle	TMDL	
	Cause		First	Dev.	Water
Assessment Unit / Water Name / Location Desc.	Catego	ry Cause Name	Listed	Priority	Size
VAP-K03R_FRC01B18 / Flat Rock Creek / Kenbridge WTP in	ntake 4A	Escherichia coli (E. coli)	2008	L	4.69
to the first confluence downstream of the Route 647 bridge					

AU split off in the 2018 cycle to correct segmentation.

Segment extent corrected and merged in the 2018 cycle.

Flat Rock Creek		Estuary	Reservoir	River
Recreation		(Sq. Miles)	(Acres)	(Miles)
	Escherichia coli (E. coli) - Total Impaired Size by Water Type:			4.69

Sources:

Livestock (Grazing or	Unspecified Domestic	Wastes from Pets	Wildlife Other than
Feeding Operations)	Waste		Waterfowl

Chowan River and Dismal Swamp Basins

Cause Group Code: K03R-08-BAC Flat Rock Creek

Cause Location: Flat Rock Creek from its headwaters to the Route 652 bridge.

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2006 cycle, Flat Rock Creek from the Route 652 bridge downstream to the Kenbridge WTP intake was impaired of the Recreation Use due to an E. coli exceedance rate of 2/3 at 5AFRC013.25. The Flat Rock Creek and Broad Branch Bacterial TMDL, which was approved by the EPA on 12/29/2008 and by the SWCB on 4/28/2009, addressed the original segment.

Note: In the 2008 cycle, the impairment was extended upstream to the headwaters based on an exceedance rate of 4/12 at 5AFRC014.70. In addition, it was mistakenly merged with the bacterial impairment at the mouth of Flat Rock Creek (K03R-01-BAC). In the 2018 cycle, the segmentation was corrected and the upstream extension was split off and nested in the 2018 cycle because the upstream-most impairment was not specifically addressed in the TMDL.

During the 2020 cycle there was no new data.

			Cycle	IMDL		
	Cause	e	First	Dev.	Water	
Assessment Unit / Water Name / Location Desc.	Catego	ry Cause Name	Listed	Priority	Size	
VAP-K03R_FRC02B18 / Flat Rock Creek / Headwaters to Route 652.	4A	Escherichia coli (E. coli)	2008	L	3.89	

Segment split in the 2018 cycle.

Flat Rock Creek	Est	stuary	Reservoir	River
Recreation	(Sq. I	. Miles)	(Acres)	(Miles)
Esche	richia coli (E. coli) - Total Impaired Size by Water Type:			3.89

Sources:

Livestock (Grazing or	Unspecified Domestic	Wastes from Pets	Wildlife Other than
Feeding Operations)	Waste		Waterfowl

Chowan River and Dismal Swamp Basins

Cause Group Code: K04R-01-BAC Stony Creek

Cause Location: Stony Creek from its headwaters to it mouth

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2004 cycle, Stony Creek was assessed not supporting of the Recreation Use support goal based on a fecal coliform violation rate of 3/19 at the Rt. 602 bridge (5ASNY000.65).

Additional monitoring was conducted during the 2010 cycle. Stony Creek remained impaired due to an E. coli violation rate of 3/12 at 5ASNY000.65. The Meherrin River and Tributaries Bacterial TMDL was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010. The impairment is within the study area and the TMDL states that this segment will be considered nested (Category 4A).

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	F	ycle TMDL first Dev. sted Priorit	Water
VAP-K04R_SNY01A96 / Stony Creek / Headwaters to mouth.	4A Escherichia coli (E. coli)	2	010 L	14.24
Stony Creek		Estuary	Reservoir	River
Recreation		(Sq. Miles)	(Acres)	(Miles)
Escherichia coli (E. coli) - Total	Impaired Size by Water Type:			14.24

Sources:

Municipal Point Source Discharges Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K04R-02-BAC Shining Creek

Cause Location: Shining Creek from its headwaters to it mouth

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2010 cycle, Shining Creek was assessed not supporting of the Recreation Use support goal based on an E. coli violation rate of 8/32 at the Rt. 637 bridge (5ASHN000.77).

The impairment is within the study area for the Meherrin River and Tributaries Bacterial TMDL, which was approved by the EPA on 4/12/2010 and 9/30/2010. The TMDL states that this segment will be considered nested (Category 4A).

The violation rate was 12/23 during the 2014 cycle, and no new data was collected during the 2016 cycle.

Additional monitoring was conducted at 5AMHN004.25 in the 2018 cycle (4/12.)

During the 2020 cycle no new data was collected.

		Cycle	TMDL	
	Cause	First	Dev.	Water
Assessment Unit / Water Name / Location Desc.	Category Cause Name	Listed	Priority	Size
VAP-K04R_SHN01A06 / Shining Creek / The mainstem of Shi Creek	ining 4A Escherichia coli (E. coli)	2010	L	7.74

Shining Creek

Recreation

Estuary (Sq. Miles)

Reservoir (Miles)

River (Acres)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

7.74

Sources:

Municipal Point Source Discharges Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K04R-03-BAC Taylors Creek

Cause Location: Taylors Creek from its headwaters to it mouth

City / County: Brunswick Co. Mecklenburg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2010 cycle, Taylors Creek was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 2/42 at the Poute 657 bridge (5AT) P004.85)

of 2/12 at the Route 657 bridge (5ATLR001.85).

The Meherrin River and Tributaries Bacterial TMDL was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010. The impairment is within the study area and the TMDL states that this segment will be considered nested (Category 4A).

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAP-K04R TLR01A10 / Taylors Creek / Headwaters to mouth at 4A Escherichia coli (E. coli) 2010 L 10.35

VAP-K04R_TLR01A10 / Taylors Creek / Headwaters to mouth at 4A Escherichia coli (E. coli) the Meherrin River

Taylors Creek

Recreation

Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 10.35

Sources:

Municipal Point Source

Discharges

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K04R-04-BAC **Meherrin River**

Cause Location: The Meherrin River from Stony Creek downstream to Taylors Creek.

City / County: Brunswick Co. Lunenberg Co. Mecklenburg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2010 cycle, the Meherrin River from Stony Creek to Taylors Creek was assessed as not supporting of the Recreation Use due to an E. coli violation rate of 5/12 at 5AMHN093.07, which is located at the Route 1 bridge.

The impairment is within the study area for the Meherrin River and Tributaries Bacterial TMDL, which was approved by the EPA on 4/12/2010 and 9/30/2010. The TMDL states that this segment will be considered nested (Category 4A).

Creek Meherrin River		Estuary		servoir	River	_
VAP-K04R_MHN01B10 / Meherrin River / Stony Creek to 1	Taylors 4A Escherichia coli (E. coli)		2010	L	6.95	
Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	1	First Listed	Dev. Priority	Water Size	
			Cycle	IMDL		

(Sq. Miles) (Acres) (Miles) Recreation 6.95

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Municipal Point Source

Discharges

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K05R-01-BAC Genito Creek

Cause Location: Mainstem from its headwaters to its mouth

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Genito Creek was originally assessed as impaired of the Recreation Use in 2006 due to E. coli exceedances at the Route 623 bridge (5AGTO001.16). During the 2010 cycle the violation rate was 9/23. The impairment was addressed in the Meherrin River and Tributaries Bacterial TMDL, which was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010. The impairment is considered Category 4A.

During the 2016 cycle the segment remained impaired for E.coli with a violation rate of 2/11.

Cause Assessment Unit / Water Name / Location Desc. Cause Category	Cycle First Cause Name Listed	TMDL Dev. Water Priority Size
VAP-K05R_GTO01A94 / Genito Creek / Headwaters to mouth. 4A Es	scherichia coli (E. coli) 2006	L 8.13
Genito Creek	Estuary Re:	servoir River
Recreation	(Sq. Miles) (A	cres) (Miles)
Escherichia coli (E. coli) - Total Impaired Si	ize by Water Type:	8.13

Sources:

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K05R-02-BAC Meherrin River

Cause Location: Meherrin River from Taylors Creek downstream to Reedy Creek

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

The Meherrin River from Taylors Creek to Reedy Creek was originally considered fully supporting but threatened during the year 1998 cycle, but was downgraded during the 2002 cycle. During the 2006 cycle, the segment was assessed as not supporting of the Recreation Use support goal based on fecal coliform exceedances at 5AMHN068.30, 5AMHN073.98, and 5AMHN082.13 and E. coli exceedances at 5AMHN082.13.

During the 2010 cycle, the E. coli exceedance rate was 13/38 at 5AMHN082.13, 4/11 at 5AMHN075.24, 7/18 at 5AMHN073.98, and 4/18 at 5AMHN068.30. In addition, monitoring at 5AMHN060.95 indicated impairment (3/12 for E. coli); therefore, the segment was extended downstream to Douglas Run. In the 2014 cycle, the exceedance rate was 17/41 at 5AMHN082.13; no additional monitoring was conducted at the other stations.

During the 2012 cycle, the Meherrin River and Tributaries bacterial TMDL was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010.

Although the upper portion was addressed in the TMDL, the expansion downstream to Douglas Run was not. The original portion of the Meherrin River is considered Category 4A. The extension was split into a separate impairment which will be due in 2022 (see K08R-01-BAC).

During the 2016 cycle the segment was still impaired for E.coli with an exceedance rate of 12/35 at station 5AMHN082.13 and 4/12 at 5AMHN068.30.

The exceedance rate was 8/35 at 5AMHN082.13 in the 2018 cycle.

During the 2020 cycle the E.coli exceedance rate was 9/35 at station 5AMHN082.13 and 7/23 at 5AMHN068.30.

Escherichia coli (E. coli) - Total Im	paired Size by Water Type:			26.20
Meherrin River Recreation	(eservoir Acres)	River (Miles)
VAP-K05R_MHN03B98 / Meherrin River / Lawrenceville PWS intake to Reedy Creek.	4A Escherichia coli (E. coli)	2006	L	14.22
VAP-K05R_MHN02B98 / Meherrin River / Hicks Creek to Lawrenceville PWS Intake.	4A Escherichia coli (E. coli)	2006	L	4.99
VAP-K05R_MHN01B98 / Meherrin River / Taylors Creek to Hicks Creek.	4A Escherichia coli (E. coli)	2006	L	6.99
Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Cycle First Listed	Dev.	Water Size

Sources:

Municipal Point Source Discharges Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K05R-03-BAC Briery Branch

Cause Location: The mainstem of Briery Branch.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Briery Branch was assessed in 2004 as not supporting of the Recreation Use support goal based on a fecal coliform exceedance rate of 4/12 at 5A-PL-GR-B, a Confined Animal Feeding Operation special study station.

Additional monitoring was conducted during the 2010 cycle. The segment remained impaired due to an E. coli exceedance rate of 6/12 at 5ABRY001.88, which was renamed from 5A-PL-GR-B. The impairment converted to E. coli, but the original TMDL due date was maintained.

The Briery Branch impairment was addressed in the Meherrin River and Tributaries Bacterial TMDL, which was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010. The impairment is considered Category 4A.

No new data has been collected.

-	ause tegory Cause Name	Cyc Firs List		Water Size
VAP-K05R_BRY01A02 / Briery Branch / Headwaters to mouth	4A Escherichia coli (E. coli)	201	0 L	4.01
Briery Branch		Estuary	Reservoir	River
Recreation		(Sq. Miles)	(Acres)	(Miles)
Escherichia coli (E. coli) - Total Impa	aired Size by Water Type:			4.01

Sources:

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K05R-04-BAC Hicks Creek

Cause Location: Headwaters to mouth at the Meherrin River.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2010 cycle, Hicks Creek was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 2/12 at the Route 623 bridge (5AHIC001.35).

The Meherrin River and Tributaries bacterial TMDL was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010. The impairment is within the study area and the TMDL states that this segment will be considered nested (Category 4A).

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Cy Fir Lis	st Dev.	Water Size
VAP-K05R_HIC01A10 / Hicks Creek / Headwaters to mouth at Meherrin River	4A Escherichia coli (E. coli)	20	10 L	7.37
Hicks Creek		Estuary (Sg. Miles)	Reservoir (Acres)	River (Miles)
Recreation Escherichia coli (E. coli) - Total	Impaired Size by Water Type:	(Oq. WillC3)	(ACICS)	7.37

Sources:

Municipal Point Source

Non-Point Source

Discharges

Chowan River and Dismal Swamp Basins Cause Group Code: K05R-05-DO Hays Creek

Cause Location: The mainstem of Hayes Creek.

City / County: Brunswick Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

During the 2010 cycle, Hays Creek was assessed as not supporting of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/11 at 5AHAY000.38, which is located at the Route 686 bridge.

During the 2016 cycle, Hays Creek remained impaired due to a dissolved oxygen exceedance rate of 2/12 at 5AHAY000.38. Dissolved oxygen was acceptable at station 5AHAY003.23 (1/12) and 5AHAY004.92 (0/9.)

During the 2020 cycle the segment remained impaired for DO with an exceedance rate of 3/24 at station 5AHAY000.38.

Dissolved Oxygen - Tota	al Impaired Size by Water Type:			6.39
Aquatic Life		(Sq. Miles)	(Acres)	(Miles)
Hays Creek		Estuary	Reservoir	River
VAP-K05R_HAY01A10 / Hays Creek / Headwaters to mouth at Meherrin River	5C Dissolved Oxygen	2	2010 L	6.39
Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	j	First Dev. isted Priority	Water Size

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K05R-06-BEN Little Genito Creek

Cause Location: Headwaters to mouth at Genito Creek.

City / County: Brunswick Co. Mecklenburg Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

During the 2010 cycle, Little Genito Creek was assessed as not supporting of the Aquatic Life Use due to benthic impairment at 2008 probabilistic monitoring station 5ALTG001.50.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K05R_LTG01A10 / Little Genito Creek / Headwaters to mouth at Genito Creek	5A Benthic Macroinvertebrat Bioassessments	es	2010	L	12.05
Little Genito Creek		Estuary	Res	ervoir	River
Aquatic Life		(Sq. Miles)	(A	cres)	(Miles)
Benthic Macroinvertebrates Bioassessments - Total	Impaired Size by Water Type:				12.05

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K05R-07-BAC Evans Creek

Cause Location: Headwaters to mouth at the Meherrin River.

City / County: Brunswick Co. Mecklenburg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2010 cycle, Evans Creek was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 4/12 at the Route 623 bridge (5AEVN000.96).

The Meherrin River and Tributaries Bacterial TMDL was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010. The impairment is within the study area and the TMDL states that this segment will be considered nested (Category 4A).

During the 2016 cycle, the segment remained impaired for E.coli with an exceedance rate of 2/11.

Cycle **TMDL** First Dev. Cause Water Listed **Priority** Assessment Unit / Water Name / Location Desc. Category Cause Name Size Escherichia coli (E. coli) 2010 VAP-K05R EVN01A10 / Evans Creek / Headwaters to mouth at 11.72 the Meherrin River.

Evans Creek

Recreation

Estuary Reservoir River (Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 11.72

Sources:

Municipal Point Source

Discharges

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K05R-08-BAC Totaro Creek

Cause Location: Headwaters to mouth at the Meherrin River.

City / County: Brunswick Co. Mecklenburg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2010 cycle, Totaro Creek was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 10/12 at the Route 58 bridge (5ATRO002.00).

The Meherrin River and Tributaries Bacterial TMDL was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010. The impairment is within the study area and the TMDL states that this segment will be considered nested (Category 4A).

Escherichia coli (E. coli) - Tota	I Impaire	d Size by Water Type:				5.33
Totaro Creek Recreation			Estuary (Sq. Miles)		servoir cres)	River (Miles)
VAP-K05R_TRO01B10 / Totaro Creek / Headwaters to start of PWS segment 5 miles above Town of Lawrenceville's intake	4A	Escherichia coli (E. coli)		2010	L	0.47
VAP-K05R_TRO01A10 / Totaro Creek / Start of PWS 5 miles above the Town of Lawrenceville's intake to its mouth at the Mehe River.	4A errin	Escherichia coli (E. coli)		2010	L	4.86
Assessment Unit / Water Name / Location Desc.	Cause Catego	e ry Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size

Sources:

Municipal Point Source Discharges Non-Point Source

Chowan River and Dismal Swamp Basins Cause Group Code: K05R-09-BAC Allen Creek

Cause Location: Headwaters to mouth

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2016 cycle, Allen Creek was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of

4/23 at 5AALN001.00.

The Meherrin River and Tributaries Bacterial TMDL was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010.

The impairment is within the study area so is considered nested (Category 4A).

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size Escherichia coli (E. coli) 2016 VAP-K05R ALN01A08 / Allen Creek / Headwaters to mouth 6.96 Allen Creek **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) Recreation

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

6.96

Sources:

Agriculture Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K06R-02-BAC Great Creek

Cause Location: The mainstem of Great Creek from Powell Creek downstream to its mouth, excluding Great Creek Reservoir.

City / County: Brunswick Co. Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Portions of Great Creek have been impaired since the 2002 cycle. During the year 2006 cycle, the previous bacteria impairments (VAP-K06R-01, -02, and -03) in Great Creek were combined based on fecal coliform exceedances at 5AXEA000.04, 5A-PL-GR-A, and 5AGTC005.40, and E. coli exceedances at 5AGTC017.75. 5AXEA000.04 and 5A-PL-GR-A are confined animal feeding operation (CAFO) special study stations that were discontinued in 2002.

During the 2008 cycle, the entire mainstem of Great Creek, excluding Great Creek Reservoir, remained impaired and converted to E. coli based on an E. coli exceedance rate of 2/11 at station 5AGTC017.75.

Monitoring was conducted throughout the segment during the 2010 cycle to characterize the extent of the impairment. The upstream and downstream stations had acceptable exceedance rates; therefore the segment was shortened and parts of the creek were partially delisted.

5AGTC025.70 - Rt. 602 - 0/11 5AGTC023.89 - Rt. 617 - 1/11 5AGTC022.59 - Rt. 620 - 0/12 5AGTC020.71 - Rt. 653 - 7/19 5AGTC017.75 - Rt. 644 - 8/19 5AGTC015.20 - Rt. 1 - 1/12 5AGTC013.62 - Rt. 763 - 3/12 5AGTC006.97 - RR bridge - 5/12 5AGTC005.40 - Rt. 713 - 1/18 5AGTC004.82 - opposite Lawrenceville STP - 1/12 5AGTC000.38 - above Buford Branch - 1/12

In the 2018 cycle, the segment from the Lawrenceville PWS intake to the mouth was relisted based on an E. coli exceedance rate of 3/12 at 5AGTC005.40. The impairment is extended to re-incorporate this portion.

The Meherrin River Bacterial TMDL was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010. The TMDL addressed the entire riverine portion of Great Creek. The segments are considered Category 2C/3A/4A as appropriate.

Escherichia coli (E. coli) - Total Impaired Size by Water Type:						
Great Creek Recreation			Estuary (Sq. Miles)		servoir cres)	River (Miles)
VAP-K06R_GTC05B00 / Great Creek / Lawrenceville PWS intake to its mouth.	4A	Escherichia coli (E. coli)		2018	L	7.57
VAP-K06R_GTC04B00 / Great Creek / Great Creek Reservoir dam to the Lawrenceville PWS intake (PWS Section 5a-3b).	4A	Escherichia coli (E. coli)		2008	L	2.75
VAP-K06R_GTC02B00 / Great Creek / Upstream extent of PWS Section 5a-3b to extent of backwater at Great Creek Reservoir.	4A	Escherichia coli (E. coli)		2006	L	2.18
VAP-K06R_GTC01C10 / Great Creek / Powell Creek to upstream extent of PWS Section 5a-3b.	4A	Escherichia coli (E. coli)		2006	L	6.44
	Cause Catego	e ry Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size

Chowan River and Dismal Swamp Basins

Sources:

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K06R-03-BAC Stevens Branch

Cause Location: The mainstem of Stevens Branch from its headwaters to its mouth at Great Creek.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Stevens Branch was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 5/10 at 5ASTV000.62, which is located at a private road off of Rt. 700.

The Meherrin River and Tributaries Bacterial TMDL was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010. The impairment is within the study area and the TMDL states that this segment will be considered nested (Category 4A).

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K06R_STV01A10 / Stevens Branch / Headwaters to mo Great Creek	outh at 4A Escherichia coli (E. coli	1	2010	L	4.30
Stevens Branch		Estuary (Sa. Miles)		ervoir cres)	River (Miles)
Recreation Escherichia coli (E. coli) - To	otal Impaired Size by Water Type:	(Oq. WillOS)	(710	7100)	4.30

Sources:

Municipal Point Source Discharges Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K06R-04-BAC Tea Branch

Cause Location: The mainstem of Tea Branch from its headwaters to its mouth at Great Creek.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Tea Branch was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 9/11 at 5ATEA001.47, which is located at Rt. 652.

The Meherrin River and Tributaries Bacterial TMDL was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010. The impairment is within the study area and the TMDL states that this segment will be considered nested (Category 4A).

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Ī	Cycle TMI First De isted Prior	v. Water
VAP-K06R_TEA01A10 / Tea Branch / Headwaters to mouth at Great Creek	4A Escherichia coli (E. coli)	2	2010 L	3.24
Tea Branch		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Recreation Escherichia coli (E. coli) - Total	Impaired Size by Water Type:	(Oq. WillO3)	(10103)	3.24

Sources:

Municipal Point Source Discharges Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K06R-05-BAC XHQ - Great Creek, UT

Cause Location: Headwaters to its mouth at Great Creek.

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Tributary XHQ was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 3/12 at

5AXHQ000.38, which is located at Rt. 603.

The Meherrin River and Tributaries Bacterial TMDL was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010. The impairment is within the study area and the TMDL states that this segment will be considered nested (Category 4A).

Assessment Unit / Water Name / Location Desc.	Cause	e ory Cause Name	First	Dev. Priority	Water Size	
VAP-K06R_XHQ01A10 / XHQ - Great Creek, UT / Headwaters to mouth at Great Creek	o 4A	Escherichia coli (E. coli)	2010	L	2.12	

XHQ - Great Creek, UT **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) Recreation

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

2.12

Sources:

Municipal Point Source Discharges

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K07R-03-BAC Rocky Run

Cause Location: Rocky Run and its tributaries, including Sandy Branch.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2010 cycle, Rocky Run was assessed as impaired of the Recreation Use due to an E. coli exceedance rate of 4/11 at 5ARYR000.62, which is located at Rt. 642.

Rocky Run drains to Roses Creek, which has a completed bacterial TMDL that was adopted by the EPA on 7/6/2004 and by the SWCB on 12/2/2004. The TMDL requires extensive reductions in the watershed; therefore, this segment is considered nested

Cycle TMDL

Assessment Unit / Water Name / Location Desc.	Cause Category (First isted	Dev. Priority	Water Size	
VAP-K07R_RYR01A08 / Rocky Run / Rocky Run and its tributaries downstream to its mouth at Roses Creek.	4A Esc	cherichia coli (E. coli)	:	2010	L	21.27
Rocky Run			Estuary	Res	ervoir	River
Recreation		(Sq. Miles)	(A	cres)	(Miles)
Escherichia coli (E. coli) - To	otal Impaired Siz	e by Water Type:				21.27

Sources:

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K07R-03-BEN Rocky Run

Cause Location: Rocky Run and its tributaries, including Sandy Branch.

City / County: Brunswick Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

During the 2008 cycle, Rocky Run was assessed as impaired of the Aquatic Life Use due to a benthic impairment at freshwater probabilistic monitoring station 5ARYR001.23.

Cvcle TMDL

Additional monitoring occurred during the 2014 cycle, both at station 5ARYR001.23 and at station 5ARYR000.62, which is located at Rt. 642. There is severe impairment at both stations.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		First isted	Dev. Priority	Water Size
VAP-K07R_RYR01A08 / Rocky Run / Rocky Run and its tributaries downstream to its mouth at Roses Creek.	5A Benthic Macroinvertebrate Bioassessments	s :	2008	L	21.27
Rocky Run		Estuary		ervoir	River
Aquatic Life	(3	Sq. Miles)	(A	cres)	(Miles)

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K07R-04-BAC Roses Creek

Cause Location: From its headwaters downstream to the Alberta Sewage Treatment Plant discharge.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2010 cycle, the portion of Roses Creek upstream of the sewage treatment plant outfall was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 2/9 at 5ARSE009.87.

Although this station is upstream of the original impaired segment, it was included in the Roses Creek Bacterial TMDL, which was adopted by the EPA on 7/6/2004 and by the SWCB on 12/2/2004. The TMDL requires extensive reductions in the watershed; therefore, this segment is considered nested.

Cause Assessment Unit / Water Name / Location Desc. Cause Category Cause Name		First	TMDL Dev. Priority	Water Size
VAP-K07R_RSE01B10 / Roses Creek / Headwaters to Town of 4A Escherichia coli (E. coli) Alberta's STP discharge		2010	L	1.95
Roses Creek Recreation	Estuary (Sq. Miles)		ervoir res)	River (Miles)
Escherichia coli (E. coli) - Total Impaired Size by Water Type:	,	`	,	1.95

Sources:

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K07R-05-BAC Soloman Creek

Cause Location: Headwaters to mouth at Roses Creek.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2018 cycle, Soloman Creek was impaired of the Recreation Use due to an E. coli exceedance rate of 3/11 at

5ASMN001.97, which is located at Rt. 634.

The creek drains to Roses Creek, which has a completed bacterial TMDL that was adopted by the EPA on 7/6/2004 and by the SWCB on 12/2/2004. The TMDL requires extensive reductions in the watershed; therefore, this segment is considered nested.

Cvcle TMDL

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	First Dev. Listed Priority						Water Size
VAP-K07R_SMN01A18 / Soloman Creek / Headwaters to me Roses Creek	outh at 4A Escherichia coli (E. coli)	2	2018	L	4.98			
Soloman Creek		Estuary	Res	servoir	River			
Recreation		(Sq. Miles)	(A	cres)	(Miles)			
Escherichia coli (E. coli) - To	otal Impaired Size by Water Type:				4.98			

Sources:

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K08L-01-HG Emporia Lake (Meherrin Reservoir)

Cause Location: Emporia Lake
City / County: Greensville Co.
Use(s): Fish Consumption

coc(e). Then concumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

In 2007 the lake had fish tissue monitoring with Mercury in 3 species (Chain Pickerel, Largemouth Bass and Redear Sunfish.

During the 2020 cycle new fish tissue data was collected and Mercury in Fish tissue was in 1 species (largemouth bass) (OE). Fish Tissue and Sediment PCB were within acceptable limits at station 5AMHN053.00.

A VDH Fish Consumption Advisory is in effect for Emporia Reservoir for Mercury, no more than two meals per month for Largemouth Bass (9/16/2008).

Assessment Unit / Water Name / Location Desc.	Caus Categ	se ory Cause Name	Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K08L_MHN02C98 / Emporia Lake (Meherrin Reservoir) Meherrin River in Emporia	/ On 5A	Mercury in Fish Tissue	2014	L	263.68

Emporia Lake (Meherrin Reservoir)

Fish Consumption

Estuary (Sq. Miles)

Reservoir (Acres)

River (Miles)

Mercury in Fish Tissue - Total Impaired Size by Water Type:

263.68

Sources:

Atmospheric Deposition -

Toxics

Chowan River and Dismal Swamp Basins

Cause Group Code: K08L-02-CHLA Brunswick Lake

Cause Location: Brunswick Lake City / County: Brunswick Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Chlorophyll-a / 5A

During the 2016 cycle the segment became impaired for Chlorophyll a with 2/3 exceedances.

no new data has been collected.

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size VAP-K08L_RDC01A98 / Brunswick Lake (County Pond) / VDGIF 5A Chlorophyll-a 2016 160.33

lake on Reedy Creek.

Brunswick Lake Estuary Reservoir River Aquatic Life (Sq. Miles) (Acres) (Miles)

Chlorophyll-a - Total Impaired Size by Water Type: 160.33

Sources:

Agriculture

Chowan River and Dismal Swamp Basins

Cause Group Code: K08L-02-DO Brunswick Lake

Cause Location: Brunswick Lake City / County: Brunswick Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5A

In 2006 Brunswick Lake was assessed as not supporting the Aquatic Life Use due to low dissolved oxygen in bottom waters. The low DO only occurred during periods of stratification, however the TSIs for the lake were above 60:

TSI(TP) = 64 TSI(CA) = 69TSI(SD) = 66

Therefore the low dissolved oxygen was considered to be exacerbated by excessive nutrients and a TMDL was required. In addition, both total phosphorus and chlorophyll a were considered observed effects b/c of screening level exceedances. The lake should be reevaluated once nutrient criteria are established.

For the 2008 cycle nutrient criteria was developed for lakes and DO was no longer impaired. Only pH was impaired at 5ARDC007.30 with an exceedance rate of 5/36.

In the 2012 cycle the segment was listed as impaired for aquatic life use with a DO exceedance rate of 7/37 at station 5ARDC007.30.

During the 2014 cycle there was no new data so the impairments remain.

During the 2016 cycle the segment was impaired for DO with an exceedance rate of 7/56 at 5ARDC007.30 and 9/47 at 5ARDC008.50.

no new data has been collected.

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size VAP-K08L_RDC01A98 / Brunswick Lake (County Pond) / VDGIF Dissolved Oxygen 2006 160.33 lake on Reedy Creek.

Brunswick Lake

Aquatic Life

Estuary (Sq. Miles)

Reservoir (Acres)

(Miles)

Dissolved Oxygen - Total Impaired Size by Water Type:

160.33

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K08R-02-BAC **Robinson Creek**

Cause Location: Robinson Creek from its headwaters to its mouth.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2010 cycle, Robinson Creek was assessed as not supporting of the Recreation Use due to an E. coli violation rate of 2/11 at 5ARNS000.94, which is located at a private road east of Rt. 670.

The Meherrin River and Tributaries Bacterial TMDL was approved by the EPA on 4/12/2010 and by the SWCB on 9/30/2010. The impairment is within the study area; therefore, this segment is considered nested (Category 4A).

Cause Assessment Unit / Water Name / Location Desc. Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K08R_RNS01A10 / Robinson Creek / Headwaters to mouth 4A Escherichia coli (E. coli) at the Meherrin River		2010	L	6.07
Robinson Creek	Estuary	Res	servoir	River

(Sq. Miles) (Acres) (Miles) Recreation 6.07

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Municipal Point Source

Discharges

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K08R-03-BAC Wilson Creek

Cause Location: Wilson Creek from its beginning at the confluence of Dukes Branch and Huckleberry Branch to its mouth at

Brunswick Lake.

City / County: Brunswick Co. Greensville Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2012 cycle, Wilson Creek was impaired of the Recreation Use due to an E. coli exceedance rate of 2/12 at

5AWIL002.42, which is located at the Route 712 bridge.

The exceedance rate was 5/12 during the 2018 cycle.

			Cycle	IMDL	
	Cause	е	First	Dev.	Water
Assessment Unit / Water Name / Location Desc.	Catego	ory Cause Name	Listed	Priority	Size
VAP-K08R_WIL01A10 / Wilson Creek / Start of Wilson Creek at the confluence of Dukes Branch and Huckleberry Branch to its more	•	Escherichia coli (E. coli)	2012	L	2.74
at Prunquiak Laka					

at Brunswick Lake

Wilson Creek

Estuary Reservoir

(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 2.74

River

Sources:

Recreation

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K08R-03-BEN Wilson Creek

Cause Location: Wilson Creek from its beginning at the confluence of Dukes Branch and Huckleberry Branch to its mouth at

Brunswick Lake.

City / County: Brunswick Co. Greensville Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

During the 2010 cycle, Wilson Creek was assessed as not supporting of the Aquatic Life Use due to impairment of the benthic community at 5AWIL002.42, which is located at Rt. 712. Additional monitoring during the 2014 cycle showed an acceptable benthic community: therefore, the stream was delisted.

During the 2016 cycle, the segment was relisted and impaired for Benthics.

The station has been discontinued due to safety concerns.

During the 2020 cycle new benthic data was collected but remained impaired.

			Cycle	TMDL	
	Cause	е	First	Dev.	Water
Assessment Unit / Water Name / Location Desc.	Catego	ory Cause Name	Listed	Priority	Size
VAP-K08R_WIL01A10 / Wilson Creek / Start of Wilson Creek at		Benthic Macroinvertebrates	2016	L	2.74
the confluence of Dukes Branch and Huckleberry Branch to its mou	uth	Bioassessments			
at Brunswick Lake					

Wilson Creek

Aquatic Life

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:

2.74

Sources:

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K08R-04-BAC XII - UT to Dukes Branch

Cause Location: Headwaters to the mouth at Dukes Branch

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2016 cycle, the segment was impaired of the Recreation use due to an E.coli exceedance rate of 3/10 at

5AXII000.38.

TMDL Cycle First Dev. Cause Water Listed Priority Size Assessment Unit / Water Name / Location Desc. Category Cause Name VAP-K08R_XII01A16 / XII - UT to Dukes Branch / Headwaters to 5A Escherichia coli (E. coli) 2016 1.71

mouth

XII - UT to Dukes Branch Estuary Reservoir River (Sq. Miles) (Acres) (Miles) Recreation

> Escherichia coli (E. coli) - Total Impaired Size by Water Type: 1.71

Sources:

Non-Point Source Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K08R-05-BAC Dukes Branch

Cause Location: Headwaters to the mouth

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2016 cycle, Dukes Branch was impaired of the Recreation use due to an E.coli exceedance rate of 4/12 at

5ADUK001.42.

No new data has been collected.

Cause Assessment Unit / Water Name / Location Desc. Cause Category Cause Name		Cycle First Listed	Dev. Priority	Water Size
VAP-K08R_DUK01A16 / Dukes Branch / Headwaters to the mouth 5A Escherichia coli (E. coli)		2016	L	2.58
Dukes Branch	Estuary	Res	servoir	River
Recreation	(Sq. Miles)	(A	cres)	(Miles)
Escherichia coli (E. coli) - Total Impaired Size by Water Type:				2.58

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K08R-06-BAC **Greensville Creek**

Cause Location: Headwaters to mouth at Meherrin City / County: Brunswick Co. Greensville Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2020 cycle the segment was impaired for E.coli with an exceedance rate of 2/12.

Cycle **TMDL** First Cause Dev. Water Priority Listed Size Assessment Unit / Water Name / Location Desc. Category Cause Name VAP-K08R_GRS01C20 / Greensville Creek / Headwaters to mouth 5A Escherichia coli (E. coli) 2020 3.77

at Meherrin

Greensville Creek Estuary Reservoir River (Sq. Miles) (Acres) (Miles) Recreation 3.77

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K09R-01-BAC Meherrin River

Cause Location: The Meherrin River from the Emporia Reservoir Dam to the Route 730 bridge

City / County: Emporia City Greensville Co. Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2016 cycle, the Meherrin River from the Emporia Reservoir dam downstream to Route 730 became impaired for the Recreation Use. Station 5AMHN026.54 had a 2/12 exceedance rate and station 5AMHN052.34 had a 4/36 exceedance rate for E.coli.

The E. coli exceedance rate was 5/36 at 5AMHN052.34 during the 2018 cycle. In addition, the impairment was extended downstream to Fontaine Creek.

During the 2020 cycle the segment remains impaired from E.coli with exceedance rates of 8/23 at station 5AMHN026.54 and 8/36 at station 5AMHN052.34.

Escherichia coli (E. coli) - Total Impaired Size by Water Type:					29.01		
Meherrin River Recreation				Estuary (Sq. Miles)		ervoir cres)	River (Miles)
-	0 / Meherrin River / Route 730 bridge to /CM29 watershed boundary).	5A	Escherichia coli (E. coli)	2	2018	L	2.26
VAP-K09R_MHN01D9 to the Route 730 bridg	8 / Meherrin River / Emporia Reservoir [e	Dam 5A	Escherichia coli (E. coli)	2	2016	L	26.75
Assessment Unit /	Water Name / Location Desc.	Caus Catego	e ory Cause Name	F	ycle irst sted	TMDL Dev. Priority	Water Size

Sources:

Non-Point Source Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K09R-01-HG Meherrin River, Fontaine Creek, Mill Swamp

Cause Location: Meherrin River below Emporia Reservoir Dam to the state line, including its tributaries Fontaine Creek up to I-95

bridge crossing and Mill Creek up to I-95 bridge crossing

City / County: Emporia City Greensville Co. Southampton Co.

Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

On 12/13/2004, the Virginia Department of Health issued a fish consumption advisory due to mercury in gizzard shad. The advisory includes the Meherrin River from below the Emporia dam downstream ~28 miles to the Route 730 bridge. In addition, on 9/16/2008, they issued an advisory for bowfin and largemouth bass from Emporia Reservoir dam to the state line, including the tributaries Fontaine Creek and Mill Swamp up to the I-95 bridge crossings.

The segments will be considered impaired of the Fish Consumption Use. The advisory was based on mercury exceedances at DEQ monitoring stations 5AMHN026.54, 5AMHN051.43, 5AFON006.07, and 5AMLS001.42.

During the 2020 cycle new Fish Tissue data was analyzed at station 5AMHN051.43 Mercury in 2 species (Golden Redhorse, Largemouth Bass)(IM)

_	Caus atego	e ory Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K09R_MHN01D98 / Meherrin River / Emporia Reservoir Dam to the Route 730 bridge	5A	Mercury in Fish Tissue		2010	L	26.75
VAP-K09R_MHN02D00 / Meherrin River / Route 730 bridge to Fontaine Creek (CM21/CM29 watershed boundary).	5A	Mercury in Fish Tissue		2010	L	2.26
VAP-K11R_FON03A98 / Fontaine Creek (aka Fountains Creek) / I-95 bridge to the Route 301 bridge.	- 5A	Mercury in Fish Tissue		2010	L	7.30
VAP-K11R_FON04A00 / Fontaine Creek (aka Fountains Creek) / Route 301 bridge to the Meherrin River in K12	5A	Mercury in Fish Tissue		2010	L	14.48
VAP-K12R_MLS01A00 / Mill Swamp / I-95 bridge to mouth at Fontaine Creek.	5A	Mercury in Fish Tissue		2010	L	11.53
VAT-K09R_MHN02D08 / Meherrin River / CM21/CM29 watershed boundary at Fountaine Cr to North Carolina border at NC Hwy 186	5A	Mercury in Fish Tissue		2010	L	5.42
Meherrin River, Fontaine Creek, Mill Swamp Fish Consumption			Estuary (Sq. Miles)		servoir cres)	River (Miles)
Mercury in Fish Tissue - Total Im				67.74		

Sources:

Atmospheric Deposition - Source Unknown Toxics

Chowan River and Dismal Swamp Basins

Cause Group Code: K09R-01-PCB Meherrin River

Cause Location: The Meherrin River from the Emporia Reservoir Dam to the Route 730 bridge

City / County: Emporia City Use(s): Fish Consumption

Cause(s) / VA Category: PCBs in Fish Tissue / 5A

During the 2004 cycle, the Meherrin River from the Emporia Reservoir dam downstream approximately 5 miles was assessed as not supporting the Fish Consumption Use due to PCBs in fish tissue in two samples at station 5AMHN051.43.

During the 2006 cycle, VDH issued a fish consumption advisory for PCBs from the Emporia dam to the Route 730 bridge (12/13/2004). The segment was extended to match the advisory. The TMDL due date for PCBs is 2016.

During the 2020 cycle new Fish Tissue data was analyzed at station 5AMHN051.43 PCB 1species (gizzard shad)(OE); 2017 SED PCB ok.

Assessment Unit / Water Name / Location Desc.		Cause Category Cause Name		Cycle First isted	TMDL Dev. Priority	Water Size
VAP-K09R_MHN01D98 / Meherrin River / Emporia Reservoir Dam 5A PCBs in Fish Tissue to the Route 730 bridge				2004	L	26.75
Meherrin River Fish Consumption			Estuary Reservoir (Sq. Miles) (Acres)			River (Miles)
	PCBs in Fish Tissue - To	otal Impaired Size by Water Type:				26.75

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K10R-01-DO Rattlesnake Creek

Cause Location: Rattlesnake Creek mainstem from headwaters to its mouth at Fontaine Creek

City / County: Brunswick Co. Greensville Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

During the 2010 cycle, Rattlesnake Creek from Edwards Creek to its mouth was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen exceedances at several stations in the segment. The impairment was extended upstream in the 2012 cycle. During the 2014 cycle, the exceedance rates were as follows:

1/10 at 5ARSK000.23 4/24 at 5ARSK003.08 6/12 at 5ARSK006.97 4/12 at 5ARSK009.28 2/10 at 5ARSK011.59

During the 2016 cycle the segment remained impaired for Aquatic Life Use due to dissolved oxygen exceedances at stations 5ARSK006.97 and 5ARSK009.28 (3/12 and 4/12, respectively.) Monitoring at station 5ARSK003.08 and 5ARSK011.59 was acceptable.

During 2020 cycle new data was collected at station 5ARSK003.08. This data was acceptable but follow up monitoring at the other stations is recommended.

		Cycle		
	Cause	First	Dev.	Water
Assessment Unit / Water Name / Location Desc.	Category Cause Name	Listed	Priority	Size
VAP-K10R_RSK01A00 / Rattlesnake Creek / Headwaters to its	5C Dissolved Oxygen	2010	L	17.18
mouth at Fontaine Creek.				

Rattlesnake Creek	Estuary	Reservoir	River
Aquatic Life	(Sq. Miles)	(Acres)	(Miles)
Dissolved Oxygen - Total Impaired	d Size by Water Type:		17.18

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K10R-02-BAC **Fontaine Creek (Fountains Creek)**

Cause Location: Fontaine Creek mainstem from Quarrel Creek to Rocky Run.

City / County: Greensville Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2010 cycle, Fontaine Creek from Quarrel Creek to Rocky Run was assessed as not supporting of the Recreation Use due to an E. coli violation rate of 4/24 at 5AFON037.89, which is located at Rt. 603.

The segment is located with the study area for the Fontaine Creek Bacterial TMDL, which was approved by the EPA on 1/13/2011 and by the SWCB on 8/4/2011. All bacterial impairments within the watershed will be addressed during the implementation phase; therefore, the segment is considered nested (Category 4A.)

		Cycle	IMDL	
	Cause	First	Dev.	Water
Assessment Unit / Water Name / Location Desc.	Category Cause Name	Listed	Priority	Size
VAP-K10R_FON01B10 / Fontaine Creek / Fontaine Creek from	4A Escherichia coli (E. coli)	2010	L	0.56

the confluence of Quarrel Creek to the end of the watershed at Rocky Run.

Fontaine Creek (Fountains Creek)

Estuary River Reservoir (Sq. Miles) (Acres) (Miles) Recreation

0.56

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Municipal Point Source Discharges

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K10R-02-DO Fontaine Creek (Fountains Creek)

Cause Location: Fontaine Creek mainstem from Rattlesnake Creek Quarrel Creek and from Rocky Run to the confluence with

tributary XGV

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

During the 2010 cycle, Fontaine Creek from Rattlesnake to the confluence with tributary XGV was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen exceedances throughout the segment.

3/9 at 5AFON039.47 3/25 at 5AFON037.89 5/12 at 5AFON033.05 3/12 at 5AFON027.33

During the 2016 cycle, the portion from Rattlesnake Run to Quarrel Creek remained impaired for Aquatic life use due to a DO exceedance rate of 2/12 at station 5AFON039.47. The portion from Quarrel Creek to Rocky Run was partially delisted (1/12 at 5AFON037.89). Rocky Run to XGV also remained listed (3/12 at 5AFON033.05, 0/12 at 5AFON027.33)

No additional monitoring was conducted during the 2018 and 2020 cycle.

Dissolved Oxygen - Total Impaired Size by Water Type:				
Fontaine Creek (Fountains Creek) Aquatic Life			Reservoir (Acres)	River (Miles)
VAP-K11R_FON01A02 / Fontaine Creek / Rocky Run to tributary XGV	5C Dissolved Oxygen	20	010 L	12.04
VAP-K10R_FON01A04 / Fontaine Creek / Fontaine Creek from the confluence of Rattlesnake Creek to Quarrel Creek.	5C Dissolved Oxygen	20)10 L	4.60
Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Fi	rst Dev. sted Priorit	Water

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K10R-03-BAC Quarrel Creek

Cause Location: Quarrel Creek mainstem from White Oak Creek to its mouth.

City / County: Brunswick Co. Greensville Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2016 cycle, Quarrel Creek became impaired for the Recreation Use due to E.coli exceedances with a violation rate

of 3/11 and was nested into the Fontaine Creek Bacteria TMDL.

Cycle TMDL
Cause
Assessment Unit / Water Name / Location Desc.

Category Cause Name

Cycle TMDL
First Dev. Water
Category Cause Name

Listed Priority Size

VAP-K10R_QRL01A10 / Quarrel Creek / Confluence with White 4A Escherichia coli (E. coli) 2016 L 3.34

Oak Creek to mouth at Fontaine Creek

Quarrel CreekEstuaryReservoirRiverRecreation(Sq. Miles)(Acres)(Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 3.34

Sources:

Agriculture Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K10R-03-DO Quarrel Creek

Cause Location: Quarrel Creek mainstem from White Oak Creek to its mouth.

City / County: Brunswick Co. Greensville Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

During the 2010 cycle, Quarrel Creek from White Oak Creek to its mouth was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen exceedances at 5AQRL000.54, which is located at Rt. 602. The exceedance rate was 5/12 during the 2012 cycle.

During the 2016 cycle, the segment remained impaired for the Aquatic Life Use due to a dissolved oxygen exceedance rate of 6/24 at 5AQRL000.54.

	Dissolved Oxygen - Total	Impaired Size by Water Type:				3.34
Aquatic Life			(Sq. Miles)	(Ac	res)	(Miles)
Quarrel Creek			Estuary	Rese	ervoir	River
VAP-K10R_QRL01A10 A Oak Creek to mouth at F	/ Quarrel Creek / Confluence with White containe Creek	e 5C Dissolved Oxygen	:	2010	L	3.34
Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		First isted	Dev. Priority	Water Size	

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K10R-03-PH **Quarrel Creek**

Cause Location: Quarrel Creek mainstem from White Oak Creek to its mouth.

City / County: Brunswick Co. Greensville Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

During the 2016 cycle, Quarrel Creek from White Oak Creek to its mouth was impaired for the Aquatic Life Use due to a pH

exceedance rate of 3/24.

TMDL Cycle First Dev. Cause Water Listed Priority Size Assessment Unit / Water Name / Location Desc. Category Cause Name VAP-K10R_QRL01A10 / Quarrel Creek / Confluence with White 5C pH 2016 L 3.34

Oak Creek to mouth at Fontaine Creek

Quarrel Creek Estuary Reservoir River (Sq. Miles) (Acres) (Miles) **Aquatic Life**

3.34 pH - Total Impaired Size by Water Type:

Sources:

Natural Sources

Chowan River and Dismal Swamp Basins

Cause Group Code: K10R-04-DO Beddingfield Creek

Cause Location: Beddingfield Creek from Mason Branch to its mouth at Fontaine Creek.

City / County: Brunswick Co. Greensville Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

During the 2010 cycle, Beddingfield Creek was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen violations at 5ABDD000.69, which is located at Rt. 600. The violation rate was 5/11 during the 2012 cycle.

During the 2016 cycle, the segment was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen violations at 5ABDD000.69 with a violation rate of 5/12.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	F	ycle TMDL irst Dev. sted Priority	Water Size
VAP-K10R_BDD01A10 / Beddingfield Creek / Mason Branch to mouth at Fontaine Creek	5C Dissolved Oxygen	2	010 L	4.18
Beddingfield Creek Aquatic Life		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Dissolved Oxygen - Tota	I Impaired Size by Water Type:			4.18

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K10R-06-PH **Rocky Run**

Cause Location: Rocky Run from the Doyle Lake dam to its mouth at Fontaine Creek.

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

Rocky Run was assessed as not supporting of the Aquatic Life Use in the 2010 cycle due to a pH exceedance rate of 2/12 at

5ARCY000.90, which is located at Route 604.

During the 2016 cycle, the segment remained impaired for the Aquatic Life Use due to a pH exceedance rate of 2/12.

Cycle **TMDL** First Dev. Water Cause Priority Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Size VAP-K10R_RCY01A10 / Rocky Run / Doyle Lake dam to mouth at 5C 2010 0.86

Fontaine Creek

Rocky Run Reservoir River **Estuary** (Sq. Miles) (Acres) (Miles) **Aquatic Life**

pH - Total Impaired Size by Water Type: 0.86

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K11R-03-BAC Cattail Creek

Cause Location: Cattail Creek upstream of Collier Branch.

City / County: Greensville Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Beginning in the 2004 cycle, the segment was assessed as not supporting of the Recreation Use goal based on fecal coliform exceedances at 5ACTT005.89 and 5ACTT002.73. These stations are confined animal feeding operation (CAFO) special study stations and are located at the Route 633 and Route 622 bridges.

Additional monitoring at 5ACTT002.73 was conducted during the 2010 cycle. The bacterial impairment converted to E. coli due to an exceedance rate of 2/12.

The Fontaine Creek Bacterial TMDL was developed during the 2012 cycle. It was approved by the EPA on 1/13/2011 and by the SWCB on 8/4/2011. Cattail Creek is within the study area for the TMDL; therefore, it is considered nested (Category 4A.)

Cattail Creek Recreation		Estuary (Sq. Miles)		servoir cres)	River (Miles)	
VAP-K11R_CTT01A02 / Cattail Creek / Headwaters at Smith dam to Collier Branch	n Pond 4A Escherichia coli (E. coli)	:	2010	L	5.33	
Cause Assessment Unit / Water Name / Location Desc. Cause Category Cause Name			Cycle First isted	Dev. Priority	Water Size	

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

5.33

Sources:

Municipal Point Source Discharges Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K11R-05-BAC Beaverpond Creek

Cause Location: VA-NC state line to mouth at Fontaine Creek

City / County: Greensville Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2020 cycle the segment became impaired for E.coli with an exceedance rate of 2/11 at station 5ABVC000.48, this segment will be nested in the Fontaine Creek TMDL (39701) approved on 1/13/2011.

The Fontaine Creek Bacterial TMDL was developed during the 2012 cycle. It was approved by the EPA on 1/13/2011 and by the SWCB on 8/4/2011. Cattail Creek is within the study area for the TMDL; therefore, it is considered nested (Category 4A.)

Cause Assessment Unit / Water Name / Location Desc. Category Cause	Cyc Fir Name List	st Dev.	Water Size
VAP-K11R_BVC01A04 / Beaverpond Creek / VA-NC state line to 4A Escherich mouth at Fontaine Creek	ia coli (E. coli) 20	20 L	3.35
Beaverpond Creek	Estuary (Sg. Miles)	Reservoir (Acres)	River (Miles)
Recreation Escherichia coli (E. coli) - Total Impaired Size by V	()	(710100)	3.35

Sources:

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K11R-05-DO **Beaverpond Creek**

Cause Location: The mainstem of Beaverpond Creek within Virginia.

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

During the 2010 cycle, Beaverpond Creek was assessed as not supporting of the Aquatic Life Use due to dissolved oxygen exceedances. The exceedance rates during the 2012 cycle were as follows:

3/12 at 5ABVC000.48 2/12 at 5ABVC002.31

During the 2016 cycle, the segment remained impaired with a DO exceedance rate of 3/12 at 5ABVC002.31. Monitoring at station 5ABVC000.48 was acceptable (1/12).

			Cycle	IMDL		
	Cause	Э	First	Dev.	Water	
Assessment Unit / Water Name / Location Desc.	Catego	ry Cause Name	Listed	Priority	Size	
VAP-K11R_BVC01A04 / Beaverpond Creek / VA-NC state line to mouth at Fontaine Creek	5C	Dissolved Oxygen	2010	L	3.35	

Beaverpond Creek	Estuary	Reservoir	River
Aquatic Life	(Sq. Miles)	(Acres)	(Miles)
Dissolved Oxygen - Total Impaired Size b	y Water Type:		3.35

Owell TMDI

Sources:

Natural Conditions - Water **Quality Standards Use** Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K11R-06-PH XGV - Fontaine Creek, UT

Cause Location: Headwaters to mouth

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

XGV was assessed as not supporting of the Aquatic Life Use in the 2010 cycle due to a pH exceedance rate of 3/7 at

5AXGV000.92.

TMDL Cycle First Dev. Cause Water Listed Priority Size Assessment Unit / Water Name / Location Desc. Category Cause Name 2010 VAP-K11R_XGV01A10 / XGV - Fontaine Creek, UT / Headwaters 5C pH L 1.95

to mouth at Fontaine Creek

XGV - Fontaine Creek, UT

(Sq. Miles) **Aquatic Life**

1.95 pH - Total Impaired Size by Water Type:

Estuary

Reservoir

(Acres)

River

(Miles)

Sources:

Natural Conditions - Water Quality Standards Use **Attainability Analyses** Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K11R-08-DO XGU - Fontaine Creek, UT

Cause Location: Headwaters to mouth

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

XGU was assessed as not supporting of the Aquatic Life Use in the 2010 cycle due to a dissolved oxygen exceedance rate of

9/12 at 5AXGU000.35, which is located at frontage road F-128.

During the 2016 cycle, the segment remained impaired due to a dissolved oxygen exceedance rate of 4/11 at 5AXGU000.35

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Cyc Fire List	st Dev.	Water Size
VAP-K11R_XGU01A10 / XGU - Fontaine Creek, UT / Headwater to mouth at Fontaine Creek	5C Dissolved Oxygen	201	0 L	1.82
XGU - Fontaine Creek, UT Aquatic Life		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type:

1.82

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K11R-08-PH XGU - Fontaine Creek, UT

Cause Location: Headwaters to mouth

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

XGU was assessed as not supporting of the Aquatic Life Use in the 2010 cycle due to a pH exceedance rate of 6/12 at

5AXGU000.35, which is located at frontage road F-128.

During the 2016 cycle, the segment remained impaired due to a pH exceedance rate of 9/11 at 5AXGU000.35.

pH - To	otal Impaired Size by Water Type				1.82
Aquatic Life		(Sq. Miles)		cres)	(Miles)
XGU - Fontaine Creek, UT		Estuary	Res	ervoir	River
VAP-K11R_XGU01A10 / XGU - Fontaine Creek, UT / Headw to mouth at Fontaine Creek	rater 5C pH		2010	L	1.82
Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		Cycle First Listed	Dev. Priority	Water Size

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K12R-01-BAC Fontaine Creek

Cause Location: From the Route 301 bridge to its mouth at the Meherrin River. Nested within segment VAP-K11R-03.

City / County: Greensville Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

In 2002 the segment of Fontaine Creek from Mill Creek to the Meherrin River was assessed as not supporting of the Recreation Use based on fecal coliform exceedances at the Route 625 bridge (5AFON006.07). During the year 2006 cycle, the segment was amended from the Route 301 bridge to the Meherrin River and E. coli was added as an impairment.

During the 2008 cycle, the segment remained impaired for bacteria due to E. coli exceedances and the impairment converted to E. coli. The violation rates during the 2010 cycle were 3/8 at 5AFON001.46 and 4/23 at 5AFON006.07.

The Fontaine Creek Bacterial TMDL was developed during the 2012 cycle and was approved by the EPA on 1/13/2011 and by the SWCB on 8/4/2011. The impairment is considered Category 4A.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		First Listed	Dev. Priority	Water Size	
VAP-K11R_FON04A00 / Fontaine Creek (aka Fountains Creek) Route 301 bridge to the Meherrin River in K12	/ 4A Escherichia coli (E. coli)		2006	L	14.48	
Fontaine Creek		Estuary	Res	servoir	River	

(Sq. Miles) (Acres) (Miles)
Escherichia coli (E. coli) - Total Impaired Size by Water Type: 14.48

interiorila coii (E. coii) - Total impalled Size by Water Type.

Cycle TMDI

Sources:

Recreation

Municipal Point Source Discharges Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K13R-01-BAC **Tarrara Creek**

Cause Location: This cause encompasses the entirety of Tarrara Creek located northeast of Boykins.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

The Recreation Use is impaired based on the E.coli bacteria data exceeds the swimming criteria indicator with 9 violates/34 obs at Station 5ATRR002.50. A TMDL was established for E. Coli on 9/28/2012.

TMDL Cycle First Dev. Cause Water Listed Priority Size Category Cause Name Assessment Unit / Water Name / Location Desc. Escherichia coli (E. coli) 2008 L 14.49

VAT-K13R_TRR01A00 / Tarrara Creek / Located northeast of Boykins. All of Tarrara Creek. Flat, marshy with low flow swamp characteristics.

Tarrara Creek **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) Recreation 14.49

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K13R-04-BAC Flat Swamp

Cause Location: This cause encompasses the area downstream of the confluence of Bellyache Swamp and Frank's Branch

extending downstream to its confluence with Tarrara Creek.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Impairment is retained for Recreational Use based on Fecal Coliform data (3 viol / 11 obs). Recreation Use was first listed as

impaired in 2004 for Fecal Coliform. A Bacteria TMDL for Flat Swamp was EPA approved 9/28/2012.

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size Escherichia coli (E. coli) 2016 8.48 VAT-K13R FTS01A04 / Flat Swamp / North of White Head Hall. Downstream of the confluence of Bellyache Swamp and Frank's

Downstream of the confluence of Bellyache Swamp and Frank's Branch extending downstream to its confluence with Tarrara Creek.

Flat Swamp

Recreation

Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 8.48

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K13R-05-BAC Meherrin River (Lower)

Cause Location: Two miles upstream (33.40) and 2.07 miles downstream (13.40) of station @ 5AMHN023.40.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

Recreation Use is impaired at station 5AMHN023.40 (4 violates/ 25 obs).

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

AT-K13R_MHN01A00 / Meherrin River (Lower) / Two miles 5A Escherichia coli (E. coli) 2020 L 4.52

VAT-K13R_MHN01A00 / Meherrin River (Lower) / Two miles upstream (33.40) and 2.07 miles downstream (13.40) of station @ 5AMHN023.40.

-

Meherrin River (Lower)

Recreation

Estuary Reservoir River (Sq. Miles)

(Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 4.52

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K14L-02-HG Nottoway Falls Lake

Cause Location: Nottoway Falls Lake

City / County: Lunenberg Co. Nottoway Co.

Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

Station ID:

5ANTW143.06 (2007 FT Sampling)

During the 2016 Fish tissue monitoring had results of Hg in 2 Species.

During the 2018 and 2020 cycle it was no new data.

Cause Cycle TMDL
First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAP-K14L_NTW01L00 / Nottoway Falls Lake / Nottoway River 5A Mercury in Fish Tissue 2010 L 32.19

Nottoway Falls Lake
Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Mercury in Fish Tissue - Total Impaired Size by Water Type: 32.19

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K14R-01-BAC Nottoway River

Cause Location: Headwaters to the backwater of Nottoway Falls Lake

City / County: Lunenberg Co. Nottoway Co. Prince Edward Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

In 1998, Nottoway River from its headwaters to The Falls was assessed as fully supporting but threatened of the Recreation Use due to fecal coliform exceedances at 5ANTW155.06. It was included on EPA's Attachment B "Waters to be Identified to Virginia for Listing Consideration During Development of Next List." It was downgraded to impaired in the 2002 cycle.

It converted to E. coli in the 2006 cycle due to an exceedance rate of 3/21 at 5ANTW155.06.

The Non-Tidal Chowan River Watershed Bacterial TMDL was approved by the EPA on 10/14/2005 and by the SWCB on 9/27/2006.

Cvcle TMDL

In the 2018 cycle, the E. coli exceedance rate is 8/36 at DEQ station 5ANTW155.06. In the 2020 cycle, the E. coli exceedance rate is 9/35 at DEQ station 5ANTW155.06.

Assessment Unit / Water Name / Location Desc.	Cause Category Ca	ause Name		First isted	Dev. Priority	Water Size
VAP-K14R_NTW01A98 / Nottoway River / Headwaters to a miles upstream of Victoria's PWS intake 200 feet upstream of 49.	~ po	nerichia coli (E. coli)	2	2006	L	13.53
				2000		4.02
VAP-K14R_NTW02A98 / Nottoway River / From a point 5 upstream of Victoria's intake to the backwaters of Nottoway F Lake, excluding tributaries.		nerichia coli (E. coli)	2	2006	L	4.02
upstream of Victoria's intake to the backwaters of Nottoway F		nerichia coli (E. coli)	Estuary		ervoir	River
upstream of Victoria's intake to the backwaters of Nottoway F Lake, excluding tributaries.				Res	ervoir cres)	

Livestock (Grazing or Unspecified Domestic Wastes from Pets Wildlife Other than Feeding Operations) Waste Wastes

Chowan River and Dismal Swamp Basins

Cause Group Code: K14R-02-BAC Big Hounds Creek

Cause Location: Big Hounds Creek from the Lunenburg Lake dam to its mouth on the Nottoway River.

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

In the 1998 cycle, Big Hounds Creek was fully supporting but threatened of the Recreation Use due to a fecal coliform exceedance rate of 4/19 recorded at 5ABHC003.73. It was included on EPA's Attachment B "Waters to be Identified to Virginia for Listing Consideration During Development of Next List." It was downgraded to impaired in the 2002 cycle with a TMDL due date of 2010.

The impairment was addressed in the Non-Tidal Chowan River Bacterial TMDL report, which was approved by the EPA on 10/14/2005 and by the SWCB on 9/27/2006.

It was subsequently shortened to end at the Lunenburg Lake dam.

In the 2014 cycle, the exceedance rate at 5ABHC003.73 was 2/12. Level II citizen monitoring was as follows:

6/34 at 5A-BHC-LUN01-SSWCD 3/36 at 5A-BHC-LUN02-SSWCD

4/36 at 5A-BHC-LUN03-SSWCD

Wildlife Other than Waterfowl

In the 2018 cycle, no additional monitoring has been conducted; therefore, the segment remains impaired (Category 4A).

During the 2020 cycle the segment remains impaired for E.coli with an exceedance rate of 3/12 at station 5ABHC003.73.

Escherichia coli (E. coli) - Total Sources:	impaired Size by Water Type:			10.34
Recreation	Lean sized Cine by Water Trans.	(Sq. Miles)	(Acres)	(Miles)
Big Hounds Creek			Reservoir	River
VAP-K14R_BHC01B98 / Big Hounds Creek / From Lunenburg Lake dam to the Nottoway River.	4A Escherichia coli (E. coli)	2000	6 L	10.34
Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Firs Liste		Water Size
	_	Cycl		

Livestock (Grazing or Feeding Operations)

Municipal Point Source Unspecified Domestic Wastes from Pets
Wastes from Pets
Waste

Chowan River and Dismal Swamp Basins

Cause Group Code: K14R-02-BEN Big Hounds Creek

Cause Location: From Lunenburg Lake dam to the Nottoway River.

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

During the 2020 cycle the segment was Impaired for Benthics at station 5ABHC006.57. Bio sampling was also performed at 5ABHC006.59 but was insufficient and referenced to use station 6.57 instead. High levels of Nutrients and periphyton growth during certain times of the year.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Cycle TMDL First Dev. Listed Priority	Water Size
VAP-K14R_BHC01B98 / Big Hounds Creek / From Lunenburg Lake dam to the Nottoway River.	5A Benthic Macroinvertebrates Bioassessments	2020 L	10.34
Big Hounds Creek Aquatic Life	Estuary (Sq. Miles	Reservoir (Acres)	River (Miles)
Benthic Macroinvertebrates Bioassessments - Total	Impaired Size by Water Type:	, , , ,	10.34

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K14R-03-BAC **Modest Creek**

Cause Location: Modest Creek Reservoir to the mouth at the Nottoway River

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2018 cycle, Modest Creek below Modest Creek Reservoir was impaired of the Recreation Use due to an E. coli exceedance rate of 2/12 at 5AMDT001.20.

The stream is located within the study area for Nottoway River bacterial TMDL, which was part of the Non-Tidal Chowan River Watershed TMDL report. The report was approved by the EPA on 10/14/2005 and by the SWCB on 9/27/2006. The impairment is proposed for nesting (Category 4A.)

During the 2020 cycle no new data was collected.

		Cycle	LINIDE		
	Cause	First	Dev.	Water	
Assessment Unit / Water Name / Location Desc.	Category Cause Name	Listed	Priority	Size	
VAP-K14R_MDT01C06 / Modest Creek / Modest Creek from	4A Escherichia coli (E. coli)	2018	L	4.85	

Modest Creek Reservoir to its mouth at the Nottoway River.

Modest Creek Estuary Reservoir River (Sq. Miles) (Acres) (Miles) Recreation

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 4.85

Owell TMDI

Sources:

Municipal Point Source Discharges

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K14R-04-BAC Nottoway River

Cause Location: Big Hounds Creek to a point 5 miles upstream of Fort Pickett's raw water intake.

City / County: Lunenberg Co. Nottoway Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2020 cycle the segment became impaired for E.coli with an exceedance rate of 5/12 at station 5ANTW132.93.

Assessment Unit / Water Name / Location Desc.	Cause Categor	ry Cause Name	F	Cycle First isted	TMDL Dev. Priority	Water Size
VAP-K14R_NTW01C98 / Nottoway River / Big Hounds Creek to a point 5 miles upstream of Fort Pickett's raw water intake.	a 5A	Escherichia coli (E. coli)	2	2020	L	6.37
VAP-K14R_NTW01D04 / Nottoway River / Nottoway River from a point five miles upstream of Fort Pickett's raw water intake to the Little Nottoway River.	a 5A	Escherichia coli (E. coli)	2	2020	L	0.89
Nottoway River			Estuary		ervoir	River
Recreation			(Sq. Miles)	(At	cres)	(Miles)
Escherichia coli (E. coli) - Total Impaired Size by Water Type:				7.26		

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins Cause Group Code: K14R-05-BAC Falls Creek

Cause Location: Falls Creek, Headwaters to the mouth City / County: Lunenberg Co. Nottoway Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2020 cycle the segment became impaired for E.coli with an exceedance rate of 3/12.

Cycle **TMDL** First Cause Dev. Water Priority Listed Size Assessment Unit / Water Name / Location Desc. Category Cause Name 2020 5.29 VAP-K14R_FLS01A20 / Falls Creek / Headwaters to the mouth Escherichia coli (E. coli) Falls Creek **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) Recreation Escherichia coli (E. coli) - Total Impaired Size by Water Type: 5.29

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K14R-06-BEN UT to Big Hounds Creek

Cause Location: Headwaters to the Mouth at Big Hounds Creek

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A During the 2020 cycle the segment became impaired for Benthics.

Cause Assessment Unit / Water Name / Location Desc. Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K14R_XIV01B20 / UT to Big Hounds Creek / Headwaters to the mouth at Big Hounds Creek / Headwaters / He	tes	2020	L	3.57
UT to Big Hounds Creek Aquatic Life	Estuary (Sq. Miles)		servoir cres)	River (Miles)
Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:				3.57

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K15L-01-HG Nottoway Pond

Cause Location: Nottoway Pond
City / County: Nottoway Co.
Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

Station ID:

5ALZT000.12 (2007 FT Sampling)

Hg 2 Species

No new data during the 2018 and 2020 cycle.

Cause Cycle TMDL
First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAP-K15L_LZT01L00 / Nottoway Pond / Lazaretto Creek 5A Mercury in Fish Tissue 2010 L 50.70

Nottoway Pond Estuary Reservoir River (Sq. Miles) (Acres) (Miles)

Mercury in Fish Tissue - Total Impaired Size by Water Type: 50.70

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K15R-01-BAC Little Nottoway River

Cause Location: Little Nottoway River from its confluence with Lazaretto Creek to its mouth on the Nottoway River.

City / County: Nottoway Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

In the 1998 cycle, the Little Nottoway River below Lazaretto Creek was assessed as fully supporting but threatened for the Recreation Use due to a fecal coliform exceedance rate of 4/20 at 5ALNT004.68. It was included on EPA's Attachment B, the "Waters to be Identified to Virginia for Listing Consideration During Development of Next List." It was downgraded to impaired in the 2002 cycle.

The impairment converted to E. coli in the 2006 cycle.

The TMDL was addressed in the Non-Tidal Chowan River Watershed Bacterial TMDL report, which was approved by the EPA on 10/14/2005 and by the SWCB on 9/27/2006.

In the 2016 cycle, the exceedance rate at upstream station 5ALNT009.80 was also impaired (3/12.)

During the 2020 cycle the segment remained impaired for E.coli with an exceedance rate of 5/12 at station 5ALNT004.68.

Assessment Unit / Water	Name / Location Desc.	Cause Catego	e ry Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
	e Nottoway River / From Lazaretto eam of Fort Pickett's raw water intake.	4A	Escherichia coli (E. coli)		2006	L	9.08
	Nottoway River / Little Nottoway ream from Fort Pickett's raw water ottoway River.	4A	Escherichia coli (E. coli)		2006	L	0.89
Little Nottoway River				Estuary	Res	servoir	River
Recreation				(Sq. Miles)	(A	cres)	(Miles)
	Escherichia coli (E. coli) - Total I	mpaire	d Size by Water Type:				9.97
Sources:							
Livestock (Grazing or Feeding Operations)	Unspecified Domestic Waste	Waste	s from Pets	Wildlife Waterfo	•	than	

Chowan River and Dismal Swamp Basins

Cause Group Code: K15R-02-BAC Carys Creek

Cause Location: Carys Creek from its headwaters to the mouth

City / County: Nottoway Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

NESTED 2010: 24384, 10/14/2005

During the 2006 cycle, Carys Creek was impaired of the Recreation Use due to an E. coli exceedance rate of 2/12 at

5ACRY001.10.

Feeding Operations)

Carys Creek is located within the study area for the Little Nottoway Bacterial TMDL, which was addressed as part of the Non-Tidal Chowan River Watershed Bacterial TMDL report. The TMDL was approved by the EPA on 10/14/2005 and by the SWCB on 9/27/2006. The impairment is considered nested (Category 4A).

Assessment Unit / Water N	lame / Location Desc.	Cause Category Cause Name	į	Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K15R_CRY01A06 / Carys headwaters to the mouth	s Creek / Carys Creek from its	4A Escherichia coli (E.	coli) 2	2006	L	6.34
Carys Creek Recreation			Estuary (Sq. Miles)		ervoir eres)	River (Miles)
	Escherichia coli (E. coli) - Tota	al Impaired Size by Water Typ	oe:			6.34
Sources:						
Livestock (Grazing or	Unspecified Domestic	Wastes from Pets	Wildlife (Other th	nan	

Waterfowl

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Waste

Chowan River and Dismal Swamp Basins

Cause Group Code: K15R-03-BAC Lazaretto Creek

Cause Location: Lazaretto Creek from its headwaters to the backwater of Crystal Lake.

City / County: Nottoway Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

NESTED 2010: 24384, 10/14/2005

During the 2010 cycle, Lazaretto Creek was impaired of the Recreation Use due to an E. coli exceedance rate of 2/12 at station 5ALZT001.39.

The stream is located within the study area for the Little Nottoway Bacterial TMDL, which was addressed as part of the Non-Tidal Chowan River Watershed Bacterial TMDL report. The TMDL was approved by the EPA on 10/14/2005 and by the SWCB on 9/27/2006. The impairment is considered nested (Category 4A.)

The exceedance rate was 2/12 in the 2018 cycle.

Assessment Unit / Water	Name / Location Desc.	Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
	aretto Creek / Lazaretto Creek from e Crewe WTP intake to the backw		1	2010	L	3.91
-	aretto Creek / Lazaretto Creek from the Crewe WTP into the Crewe WTP i	,	1	2010	L	1.06
Lazaretto Creek			Estuary	Res	servoir	River
Recreation			(Sq. Miles)	(A	cres)	(Miles)
	Escherichia coli (E. coli) - To	tal Impaired Size by Water Type:				4.97
Sources:						
Livestock (Grazing or Feeding Operations)	Unspecified Domestic Waste	Wastes from Pets	Wildlife Waterfo	•	than	

Chowan River and Dismal Swamp Basins

Cause Group Code: K15R-04-BEN Mallorys Creek

Cause Location: Mallorys Creek from its headwaters to the mouth

City / County: Nottoway Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

During the 2014 cycle, Mallorys Creek was impaired of the Aquatic Life Use based on 2012 freshwater probabilistic monitoring at 5AMLL000.03. Sediment metrics scored moderate to low with the presence of beaver activity and filamentous algae.

Additional monitoring occurred in 2014 at station 5AMLL001.27. This also indicated impairment. This is a small stream with eroded clay banks and excessive sedimentation. There is cattle access downstream of the bridge.

Cause Assessment Unit / Water Name / Location Desc. Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K15R_MLL01A06 / Mallorys Creek / Mallorys Creek from its headwaters to the mouth 5A Benthic Macroinve Bioassessments	ertebrates	2014	L	7.11
Mallorys Creek Aguatic Life	Estuary (Sq. Miles)		servoir cres)	River (Miles)
Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water T	уре:			7.11

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K15R-05-BAC Whetstone Creek

Cause Location: Whetstone Creek from its headwaters to its mouth on the Little Nottoway River.

City / County: Nottoway Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

NESTED 2014: 24384, 10/14/2005

During the 2014 cycle, Whetstone Creek was impaired of the Recreation Use due to an E. coli exceedance rate of 2/11 at station 5AWSN000.48.

The stream is located within the study area for the Little Nottoway Bacterial TMDL, which was addressed as part of the Non-Tidal Chowan River Watershed Bacterial TMDL report. The TMDL was approved by the EPA on 10/14/2005 and by the SWCB on 9/27/2006. The impairment is considered nested (Category 4A.)

Assessment Unit / Water	Name / Location Desc.	Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K15R_WSN01A08 / Wh from its headwaters to its mount	etstone Creek / Whetstone Cre th on the Little Nottoway River	ek 4A Escherichia coli (E. coli)		2014	L	8.41
Whetstone Creek			Estuary	Re	servoir	River
Recreation			(Sq. Miles)	(A	(cres	(Miles)
	Escherichia coli (E. coli) - To	otal Impaired Size by Water Type:				8.41
Sources:						
Livestock (Grazing or Feeding Operations)	Unspecified Domestic Waste	Wastes from Pets	Wildlife Waterfo		than	

Chowan River and Dismal Swamp Basins

Cause Group Code: K15R-06-BEN Little Nottoway River

Cause Location: Little Nottoway River from its confluence with Lazaretto Creek to 5 miles above the Town of Blackstone's raw water

intake.

City / County: Nottoway Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

During the 2018 cycle, this segment of the Little Nottoway River was impaired of the Aquatic Life Use due to a poor benthic community during 2013 monitoring at 5ALNT009.80, which is located at the Route 625 bridge.

Cause Assessment Unit / Water Name / Location Desc. Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K15R_LNT01A00 / Little Nottoway River / From Lazaretto Creek to a point 5 miles upstream of Fort Pickett's raw water intake. 5A Benthic Macroinvertebra Bioassessments	tes	2018	L	9.08
Little Nottoway River	Estuary (Sq. Miles)		ervoir cres)	River (Miles)
Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:				9.08

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K16L-01-DO Fort Pickett Reservoir

Cause Location: Fort Pickett Reservoir

City / County: Brunswick Co. Nottoway Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5A

During the 2018 cycle the segment became impaired for DO at station 5ANTW127.14 with an exceedance rate of 5/46.

Cause Cycle TMDL
First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAP-K16L_NTW01L04 / Fort Pickett Reservoir / Fort Pickett 5A Dissolved Oxygen 2018 L 318.95

Reservoir

Fort Pickett Reservoir

Aquatic Life

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type: 318.95

Sources:

Natural Sources

Chowan River and Dismal Swamp Basins

Cause Group Code: K16L-01-TP Fort Pickett Reservoir

Cause Location: Fort Pickett Reservoir

City / County: Brunswick Co. Nottoway Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Phosphorus, Total / 5A

Station IDs:

5ANTW127.14 (Lake Station)

During the 2016 cycle the Lake was treated with algaecides and was impaired for Total Phosphorus - 2/3 exceedance Rate

(Median calculated from 3 sample years)

During the 2018 cycle the segment remained impaired for TP with 1/2 exceedances.

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAP-K16L_NTW01L04 / Fort Pickett Reservoir / Fort Pickett 5A Phosphorus, Total 2012 L 318.95

Reservoir

Fort Pickett Reservoir

Aquatic Life

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Phosphorus, Total - Total Impaired Size by Water Type: 318.95

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K16R-01-BEN XBL - Hurricane Branch, UT

Cause Location: Hurricane Branch, UT from the Town of Blackstone STP to its mouth on Hurricane Branch.

City / County: Nottoway Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 4A

Hurricane Branch below the Town of Blackstone Municipal STP was initially impaired in the 1994 cycle based on benthic monitoring gat 5AXBL000.80 in comparison to reference station 5AXBL001.18, which is located upstream of the discharge.

The TMDL was approved by the EPA on 9/30/2004 and by the SWCB on 3/15/2005.

Additional monitoring in 2008 and 2010-2012 confirmed the impairment.

Note: The impairment was extended upstream to the headwaters in the 2008 cycle based on an impaired community at 5AXBL000.80. This section was considered nested; however, it was mistakenly included in the same fact sheet. The impairment will remain nested in the 2018 cycle, but the fact sheets will be separated (see K16R-03-BEN).

Cause Assessment Unit / Water Name / Location Desc. Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K16R_XBL01A94 / Hurricane Branch, Unnamed Tributary / 4A Benthic Macroinvertebra Brown Blackstone STP discharge to mouth at Hurricane Branch.	ates	1994	L	1.07
XBL - Hurricane Branch, UT Aquatic Life	Estuary (Sq. Miles)		servoir cres)	River (Miles)
Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:				1.07

Sources:

Non-Point Source Unspecified Urban

Stormwater

Chowan River and Dismal Swamp Basins

Cause Group Code: K16R-02-BAC **Beaver Pond Creek**

Cause Location: Beaver Pond Creek from its headwaters to its mouth on the Nottoway River

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Beaverpond Creek was assessed as fully supporting but threatened for the Recreation Use in the 1998 cycle to a fecal coliform exceedance rate of 6/12 at 5ABPC000.12. It was included on EPA's Attachment B list - "Waters Identified to Virginia for Listing Consideration During Development of Next List." It wad downgraded in the 2002 cycle with a TMDL due date of 2010.

The impairment converted to E. coli in the 2006 cycle due to an exceedance rate of 4/12.

The TMDL for Beaver Pond Creek was included in the Non-Tidal Chowan River Watershed Bacterial TMDL, which was approved by the EPA on 10/15/2005 and by the SWCB on 9/27/2006.

The exceedance rate was 13/24 in the 2016 cycle.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
$\label{lem:VAP-K16R_BPC01A00} \ / \ \ \mbox{Beaver Pond Creek} \ / \ \mbox{Beaver Pond from its headwaters to its mouth on the Nottoway River}$	Creek 4A Escherichia coli (E. coli)		2004	L	7.43
Beaver Pond Creek Recreation		Estuary (Sq. Miles)		servoir cres)	River (Miles)
Escherichia coli (E. coli) - Total Impaired Size by Water Type:					
Sources:					

Livestock (Grazing or	Unspecified Domestic	Wastes from Pets	Wildlife Other than
Feeding Operations)	Waste		Waterfowl

Chowan River and Dismal Swamp Basins

Cause Group Code: K16R-03-BEN XBL - Hurricane Branch, UT

Cause Location: Hurricane Branch, UT from its headwaters to the Town of Blackstone outfall

City / County: Nottoway Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 4A

Hurricane Branch below the Town of Blackstone Municipal STP was initially impaired in the 1994 cycle based on benthic monitoring gat 5AXBL000.80 in comparison to reference station 5AXBL001.18, which is located upstream of the discharge. The TMDL was approved by the EPA on 9/30/2004 and by the SWCB on 3/15/2005.

The impairment was extended upstream to the headwaters in the 2008 cycle based on an impaired community at 5AXBL000.80 during monitoring in 2008 and 2010-2012. This section is considered nested; however, it was mistakenly included in the same fact sheet. The impairment will remain nested in the 2018 cycle, but the fact sheets will be separated.

	Cycle	IMDL	
Cause	First	Dev.	Water
Assessment Unit / Water Name / Location Desc. Category Cause Name	Listed	Priority	Size
VAP-K16R_XBL02A02 / Hurricane Branch, Unnamed Tributary / 4A Benthic Macroinvertebrates An unnamed tributary of Hurricane Branch from its headwaters to the Bioassessments	2008	L	2.10
Town of Blackstone STP outfall.			

XBL - Hurricane Branch, UT

Aquatic Life

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type: 2.10

Sources:

Non-Point Source Unspecified Urban

Stormwater

Chowan River and Dismal Swamp Basins

Cause Group Code: K16R-03-DO Hurricane Branch

Cause Location: Hurricane Branch from Gettysburg Road crossing to its confluence with Nottoway River

City / County: Nottoway Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

During the 2020 cycle the segment became impaired again for Dissolved Oxygen with an exceedance rate of 4/24.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	L	First _isted	Dev. Priority	Water Size
VAP-K16R_HUR01A04 / Hurricane Branch / Hurricane Branch from Gettysburg Road crossing to its confluence with Nottoway Ri			2020	L	2.00
Hurricane Branch Aquatic Life		Estuary (Sq. Miles)		servoir cres)	River (Miles)
•	I Impaired Size by Water Type:				2.00

Cycle TMDL

Sources:

Natural Sources

Chowan River and Dismal Swamp Basins

Cause Group Code: K16R-06-BAC Tommeheton Creek

Cause Location: Tommeheton Creek from its headwaters to the backwaters of Tommeheton Lake.

City / County: Brunswick Co. Dinwiddie Co. Lunenberg Co. Nottoway Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2016 cycle, upper Tommeheton Creek was impaired of the Recreation Use due to an E. coli exceedance rate of

2/12 at 5ATMT006.63.

During the 2020 cycle the segment remained impaired for E.coli with an exceedance rate of 3/24.

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAP-K16R_TMT01A10 / Tommeheton Creek / Tommeheton Creek 5A Escherichia coli (E. coli) 2016 L 7.62

from its headwaters to the backwaters of Tommeheton Lake.

Tommeheton Creek

Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 7.62

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K16R-06-DO **Tommeheton Creek**

Cause Location: Tommeheton Creek from its headwaters to the backwaters of Tommeheton Lake. City / County: Brunswick Co. Dinwiddie Co. Lunenberg Co. Nottoway Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

During the 2010 cycle, upper Tommeheton Creek was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 4/12 at 5ATMT006.63.

The exceedance rate was 3/12 in the 2016 cycle.

During the 2020 cycle the segment remained impaired for DO with an exceedance rate of 8/24.

Cycle **TMDL** First Dev. Cause Water Listed **Priority** Assessment Unit / Water Name / Location Desc. Category Cause Name Size Dissolved Oxygen 2010 7.62 VAP-K16R_TMT01A10 / Tommeheton Creek / Tommeheton Creek 5C Μ from its headwaters to the backwaters of Tommeheton Lake.

Tommeheton Creek Estuary River Reservoir (Sq. Miles) (Acres) (Miles) **Aquatic Life** Dissolved Oxygen - Total Impaired Size by Water Type: 7.62

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K16R-07-BAC Seay Creek

Cause Location: Seay Creek from its headwaters to it mouth on Crooked Creek.

City / County: Lunenberg Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2020 cycle the segment is impaired for E.coli with an exceedance rate of 2/12.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Fi	rcle TMDL irst Dev. sted Priority	Water Size
VAP-K16R_SYC01A14 / Seay Creek / From its headwaters to a point 5 miles above Fort Pickett's raw water intake.	5A Escherichia coli (E. coli	20)20 L	6.98
VAP-K16R_SYC02B14 / Seay Creek / Seay Creek from a point 5 miles above Fort Pickett's raw water intake to its mouth on Crooked Creek		20)20 L	0.50
Seay Creek		Estuary	Reservoir	River
Recreation		(Sq. Miles)	(Acres)	(Miles)
Escherichia coli (E. coli) - Total Impaired Size by Water Type:				

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K16R-07-BEN Seay Creek

Cause Location: Seay Creek from its headwaters to it mouth on Crooked Creek.

City / County: Lunenberg Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

During the 2014 cycle, Seay Creek was impaired of the Aquatic Life Use based on benthic monitoring at 5A5ASYC003.90 in 2012. Additional monitoring occurred in 2013.

Seay Creek and its benthic community is limited by available habitat. Hardpan clay is dominant and banks show signs of frequent scouring events. Algae and brown floc observed in slower reached of the stream, indicating a potential for nutrient enrichment.

During the 2020 cycle the segment remained impaired for Benthics, new data was collected in 2017 and appears to be negatively affected by sedimentation. Riffles consisted of sand and gravel while banks had erosion scars.

Assessment Unit / Water Name / Location Desc.	Cause Catego	e ry Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K16R_SYC01A14 / Seay Creek / From its headwaters to a point 5 miles above Fort Pickett's raw water intake.	5A	Benthic Macroinvertebra Bioassessments	tes	2014	M	6.98
VAP-K16R_SYC02B14 / Seay Creek / Seay Creek from a point 5 miles above Fort Pickett's raw water intake to its mouth on Crooked Creek	5A	Benthic Macroinvertebra Bioassessments	tes	2014	M	0.50
Seay Creek Aquatic Life			Estuary (Sq. Miles)		servoir .cres)	River (Miles)
Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:					7.48	

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K17R-01-BAC Nottoway River

Cause Location: The Nottoway River from Turkey Egg Creek to Sturgeon Creek.

City / County: Brunswick Co. Dinwiddie Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2010 cycle, the Nottoway River from Turkey Egg Creek to Sturgeon Creek was assessed as not supporting of the Recreation Use due to E. coli exceedances at the Route 1 bridge (5ANTW109.02). The exceedance rate was 7/36 during the 2014 cycle.

During the 2016 and 2018 cycles, the segment remained impaired due to exceedance rates of 3/12 at station 5ANTW0113.13 and 9/41 at 5ANTW109.02.

During the 2020 cycle the segment remained impaired for E.coli with an exceedance rate of 7/12 at station 5ANTW109.02

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	F	First Dev. isted Priority	Water Size
VAP-K17R_NTW01A00 / Nottoway River / Turkey Egg Creek to Sturgeon Creek	5A Escherichia coli (E. coli)	2	2010 H	9.99
Nottoway River Recreation		Estuary (Sg. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli (E. coli) - Total I	Impaired Size by Water Type:	()	()	9.99

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K17R-02-BAC Wagua Creek

Cause Location: Wagua Creek - headwaters to the Masons Mill Pond dam.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

Waqua Creek from its headwaters to the Route 46 bridge was initially assessed as not supporting of the Recreation Use goal during the 2002 cycle. In 2004, the impairment was based on fecal coliform exceedances at 5AWAQ020.52 (Route 617) and at 5AWAQ022.17 (private road). These stations were confined animal feeding operation (CAFO) special study stations.

Additional monitoring was conducted during the 2012 cycle. The impairment was confirmed due to an E. coli violation rate of 3/12 at 5AWAQ020.52 and the impairment was converted to E. coli.

In the 2016 cycle, Waqua Creek from Route 46 to one mile downstream was not supporting for the Recreation use due to an E.coli violation rate of 2/12 (2016 fact sheet K16R-07-BAC). The impairment was merged with the existing upstream impairment during the 2018 cycle and was extended downstream to Masons Mill Pond.

Cycle TMDL

During the 2020 cycle the segment remained impaired for E.coli with exceedance rates at 5AWAQ019.29 (7/24), 5AWAQ020.52(6/12), 5AWAQ022.17(4/10).

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		irst Dev. sted Priority	Water Size
VAP-K17R_WAQ01B00 / Waqua Creek / Headwaters to Masons Mill Pond.	s 5A Escherichia coli (E. coli)	20)12 H	9.61
Waqua Creek Recreation		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli (E. coli) - Total	Impaired Size by Water Type:	,	,	9.61

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K17R-03-BAC Waqua Creek

Cause Location: Waqua Creek from the confluence with Great Branch to the mouth

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2016 cycle, Waqua Creek from Great Branch to the mouth was impaired for the Recreation Use due to an E.coli

violation rate of 2/12 at 5AWAQ001.40.

During the 2020 cycle the segment remained impaired for E.coli with an exceedance rate of 3/23.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	F	ycle TMDL First Dev. sted Priority	Water Size
VAP-K17R_WAQ03A16 / Waqua Creek / Confluence of Great Branch to the mouth at the Nottoway River.	5A Escherichia coli (E. coli)	2	016 L	5.59
Waqua Creek Recreation		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli (E. coli) - Total Impaired Size by Water Type:				

Sources:

Agriculture Non-Point Source Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K17R-04-BAC Great Creek

Cause Location: Great Creek from the headwaters to the mouth

City / County: Brunswick Co. Dinwiddie Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2016 cycle, Great Creek was impaired of the Recreation Use due to exceedances of E.coli. The exceedance rate

was 7/12 at 5AGRC002.46.

TMDL Cycle First Dev. Cause Water Listed Priority Size Category Cause Name Assessment Unit / Water Name / Location Desc. VAP-K17R_GRC01A16 / Great Creek / From the headwaters to 5A Escherichia coli (E. coli) 2016 5.45

the mouth at the Nottoway River

Great CreekEstuaryReservoirRiverRecreation(Sq. Miles)(Acres)(Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 5.45

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K17R-05-BAC Reedy Creek

Cause Location: Reedy Creek from the headwaters to the mouth

City / County: Brunswick Co. Dinwiddie Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2016 cycle, Reedy Creek was assessed as not supporting the Recreation use due to an E.coli exceedance rate of

10/24 at 5ARYC002.31.

TMDL Cycle First Dev. Cause Water Listed Priority Size Category Cause Name Assessment Unit / Water Name / Location Desc. VAP-K17R_RYC01A16 / Reedy Creek / From its headwaters to 5A Escherichia coli (E. coli) 2016 6.02

the mouth at the Nottoway River

Reedy Creek

Recreation

Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 6.02

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K17R-05-DO Reedy Creek

Cause Location: Reedy Creek from the headwaters to the mouth

City / County: Brunswick Co. Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

During the 2016 cycle, Reedy Creek was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 4/25

at 5ARYC002.31.

TMDL Cycle First Dev. Cause Water Listed Priority Size Category Cause Name Assessment Unit / Water Name / Location Desc. VAP-K17R_RYC01A16 / Reedy Creek / From its headwaters to 5C Dissolved Oxygen 2016 L 6.02

the mouth at the Nottoway River

Reedy Creek

Aquatic Life

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type: 6.02

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K17R-06-BAC Turkey Egg Creek

Cause Location: Turkey Egg Creek from the headwaters to the mouth

City / County: Brunswick Co. Dinwiddie Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2016 cycle, Turkey Egg Creek was impaired of the Recreation use due to exceedances of E.coli at 5ATEG001.77.

The exceedance rate was 6/12.

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAP-K17R_TEG01A16 / Turkey Egg Creek / From its headwaters 5A Escherichia coli (E. coli) 2016 L 5.64

to the mouth at the Nottoway River

Turkey Egg Creek

Recreation

Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 5.64

Sources:

Non-Point Source Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K17R-07-DO Hickory Run

Cause Location: Hickory Run from its headwaters to its mouth.

City / County: Brunswick Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

During the 2016 cycle, Hickory Run was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 2/12 at

station 5AHCK000.96.

TMDL Cycle First Dev. Cause Water Listed Priority Size Assessment Unit / Water Name / Location Desc. Category Cause Name VAP-K17R_HCK01A16 / Hickory Run / From its headwaters to its 5C Dissolved Oxygen 2016 L 4.94

mouth

Estuary Reservoir

(Acres)

(Sq. Miles)

River (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type:

4.94

Sources:

Hickory Run

Aquatic Life

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K17R-07-PH **Hickory Run**

Cause Location: Hickory Run from its headwaters to its mouth.

City / County: Brunswick Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

During the 2016 cycle, Hickory Run was impaired of the Aquatic Life Use due to a pH exceedance rate of 2/12 at station

5AHCK000.96.

TMDL Cycle First Dev. Cause Water Listed Priority Size Assessment Unit / Water Name / Location Desc. Category Cause Name 2016 VAP-K17R_HCK01A16 / Hickory Run / From its headwaters to its 5C pH L 4.94

mouth

Hickory Run **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) **Aquatic Life**

pH - Total Impaired Size by Water Type: 4.94

Sources:

Natural Conditions - Water Quality Standards Use **Attainability Analyses** Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K19R-01-BAC Masons Branch

Cause Location: Masons Branch from Headwaters to RM 2.77.

City / County: Brunswick Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2012 cycle, Masons Branch was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 2/17 at 5AMSN001.62, which is located at the Route 633 bridge.

During the 2016 cycle, the segment remained impaired due to an E.coli exceedance rate of 2/11 at station 5AMSN003.24. Monitoring at the original listing station, 5AMSN001.62, was acceptable (0/10.)

During the 2020 cycle this segment was split from VAP-K19R_MSN01A10 and includes the upper station 5AMSN003.24. The new segment remained impaired for E.coli with an exceedance rate of 3/22 at station 5AMSN003.24.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K19R_MSN01B20 / Masons Branch / Headwaters to RI	M 2.77 5A Escherichia coli (E. coli)		2012	L	2.11
Masons Branch		Estuary	Res	servoir	River
Recreation		(Sq. Miles)	(A	cres)	(Miles)
Escherichia coli (E. coli) - To	otal Impaired Size by Water Type:				2.11

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K19R-03-BAC Buckskin Creek

Cause Location: Buckskin Creek from RM 3.46 to its mouth at the Nottoway River.

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

Buckskin Creek was previously assessed as not supporting the Recreation Use goal based on a fecal coliform violations at the Route 609 bridge (5ABSK004.32).

Additional monitoring was conducted during the 2010 cycle. The impairment was confirmed and converted to E. coli due to a violation rate of 2/10. During the 2012 cycle, the violation rates were as follows:

2/12 at 5ABSK000.60 5/22 at 5ABSK004.32 3/12 at 5ABSK006.52 4/12 at 5ABSK007.40 2/12 at 5ABSK008.75 4/11 at 5ABSK011.17

Additional sampling occurred in the 2016 cycle. Data indicated impairment at all monitored stations.

During the 2020 cycle this segment was split off VAP-K19R_BSK01A00 and only has station 5ABSK000.60. This segment remains impaired for E.coli with an exceedance rate of 5/12 at 5ABSK000.60.

TMDL

Cycle

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	First List	ed Priority	Water Size
VAP-K19R_BSK01C20 / Buckskin Creek / From the mouth to rivermile 6.65 (at the 4th UT from the mouth)	5A Escherichia coli (E. coli)	201	0 L	3.46
Buckskin Creek		Estuary	Reservoir	River
Recreation		(Sq. Miles)	(Acres)	(Miles)
Escherichia coli (E. coli) - Total Impaired Size by Water Type:				

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K19R-03-DO Buckskin Creek

Cause Location: Buckskin Creek from the confluence with XHW to the second downstream tributary.

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

During the 2012 cycle, the portion of Buckskin Creek immediately downstream of tributary XHW was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 6/12 at 5ABSK008.75, which is located at Rt. 692.

During the 2016 cycle, the segment was extended slightly further downstream to include station 5ABSK007.40. Both stations are impaired for the Aquatic Life Use due to DO violations with exceedance rates of 3/24 at station 5ABSK007.40 and 9/24 at station 5ABSK008.75.

Cycle TMDL

1.96

During the 2020 cycle the segment remained impaired for DO with exceedances at 5ABSK007.40(6/23) and 5ABSK008.75(9/24). The segment will be delisted for E.coli with exceedance rates at 5ABSK007.40(0/11) and 5ABSK008.75(1/11).

Cause Assessment Unit / Water Name / Location Desc. Cause Category Categor	First Dev. use Name Listed Priority	Water Size
VAP-K19R_BSK01B12 / Buckskin Creek / Confluence with XHW 5C Dissol to a downstream confluence	lved Oxygen 2012 L	1.96
Buckskin Creek Aquatic Life	Estuary Reservoir (Sq. Miles) (Acres)	River (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type:

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K19R-04-HG Nottoway River and Tributaries

Cause Location: The Nottoway River from the confluence with the Blackwater River at the Virginia-North Carolina state line upstream to State Route 619 near Purdy, including its tributaries Assamoosick Swamp, Three Creek up to I-95, Rowanty

Creek and tributaries, Hatcher Run to I-85, and Arthur Swamp to I-85.

City / County: Brunswick Co. Dinwiddie Co. Emporia City Greensville Co. Prince George Co.

Southampton Co. Sussex Co.

Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

During the 2008 cycle, the Nottoway River from the confluence with the Blackwater River at the Virginia-North Carolina state line upstream to State Route 619 near Purdy, including its tributary Assamoosick Swamp, was considered impaired of the Fish Consumption Use due to a VDH fish consumption advisory for mercury. Three Creek up to I-95, Rowanty Creek and its tributaries, Hatcher Run up to I-85, and Arthur Swamp up to I-85 were added to the advisory during the 2010 cycle. No more than two meals/mouth of Blue Catfish, largemouth bass, smallmouth bass, bowfin, redhorse sucker species, longnose gar, channel catfish, chain pickerel, or sunfish species are recommended.

O 1 TMD1

The advisory was based on exceedances of TSVs and TVs at several DEQ fish tissue monitoring stations, including 5ANTW091.70, 5ANTW075.48, 5ANTW077.95, 5ANTW045.45, 5AASM013.36, 5AROW002.41, 5AATH006.56, and 5AHRA004.16.

Cauc	2	Cycle	TMDL	Water
	-			Size
e 5A	Mercury in Fish Tissue	2020	L	0.49
5A	Mercury in Fish Tissue	2008	L	13.84
5A	Mercury in Fish Tissue	2008	L	4.50
5A	Mercury in Fish Tissue	2020	L	5.38
5A	Mercury in Fish Tissue	2020	L	1.04
5A	Mercury in Fish Tissue	2020	L	3.84
5A	Mercury in Fish Tissue	2010	L	3.71
5A	Mercury in Fish Tissue	2010	L	4.66
le 5A	Mercury in Fish Tissue	2010	L	3.89
5A	Mercury in Fish Tissue	2010	L	16.22
ts 5A	Mercury in Fish Tissue	2008	L	16.66
5A	Mercury in Fish Tissue	2010	L	14.07
5A dix 5 - 2	Mercury in Fish Tissue 223	2008	L	19.17
i	Categorie 5A 5	5A Mercury in Fish Tissue 55A Mercury in Fish Tissue 55A Mercury in Fish Tissue 55A Mercury in Fish Tissue	Cause Category Cause Name Listed 1e 5A Mercury in Fish Tissue 2008 5A Mercury in Fish Tissue 2008 5A Mercury in Fish Tissue 2008 5A Mercury in Fish Tissue 2020 5A Mercury in Fish Tissue 2010 5A Mercury in Fish Tissue 2010	Cause Category Cause Name Listed Priority 10

Chowan River and Dismal Swamp Basins

downstream to Three Creek

State Scenic River

State Scenic River			
Merged in the 2018 cycle			
VAP-K26R_TRE01B98 / Three Creek / I-95 to Otterdam Swamp. 5A Mercury in Fish Tissue	2010	L	5.10
VAP-K26R_TRE02B98 / Three Creek / Otterdam Swamp to 5A Mercury in Fish Tissue Browns Branch.	2010	L	5.43
VAP-K29R_ASM01A98 / Assamoosick Swamp / Headwaters to 5A Mercury in Fish Tissue Route 607 bridge.	2008	L	15.41
VAP-K29R_ASM02A02 / Assamoosick Swamp / Start of PWS at 5A Mercury in Fish Tissue river mile 2.5 to mouth.	2008	L	2.44
VAP-K29R_ASM02A98 / Assamoosick Swamp / Route 607 bridge 5A Mercury in Fish Tissue to river mile 2.5.	2008	L	5.59
VAT-K27R_TRE01A00 / Three Creek - Upper / From confluence of 5A Mercury in Fish Tissue Chatman Branch (RM 19.26) downstream to above Southampton Correctional Farm at Rt 308 crossing (RM 10.4).	2010	L	9.17
VAT-K27R_TRE02A00 / Three Creek - Lower / Lower portion of Three Creek. From area of Southampton Correctional Center at Rt 308 crossing (RM 10.4) downstream to confluence with Nottoway River (RM 0.00).	2010	L	10.67
VAT-K28R_NTW01A00 / Nottoway River - Upper / From upstream 5A Mercury in Fish Tissue intersection with watershed boundary (near Three Cr. confluence, RM 36.50) downstream to 5 miles upstream of Courtland (RM 32.00, end of PWS area - downstream of confluence with Buckhorn Swamp at Vicks Isl.).	2008	L	4.44
VAT-K28R_NTW02A00 / Nottoway River - Middle (PWS area) / 5A Mercury in Fish Tissue Middle portion of Nottoway River, 5 miles above Norfolk's intake @ Courtland (RM 32.0) at Vicks Island downstream to Norfolk and Western RR crossing @ Courtland (RM 27.00). PWS due to Norfolk raw water intake upstream of Courtland.	2008	L	5.53
VAT-K28R_NTW03A00 / Nottoway River - Lower / Lower portion 5A Mercury in Fish Tissue of Nottoway River, beginning near Courtland (Norfolk and Western RR crossing, above Rt 58) downstream to end of watershed K28 (NW of Delaware).	2008	L	10.06
VAT-K30R_NTW01A08 / Nottoway River - Upper / Upper portion 5A Mercury in Fish Tissue of Nottoway River in watershed K30. Segment begins at upstream intersection with watershed boundary (NW of Delaware) downstream below Route 671.	2008	L	0.45
VAT-K30R_NTW02A08 / Nottoway River -Lower Middle / Middle 5A Mercury in Fish Tissue portion of Nottoway River in watershed K30. Segment starts below Route 671 downstream just below Point Beach.	2008	L	10.96
VAT-K30R_NTW02B14 / Nottoway River - Lower / Lower portion 5A Mercury in Fish Tissue of Nottoway River in watershed K30. Segment starts below Mill Creek near Point Beach to VA/NC state line.	2008	L	4.54
Nottoway River and Tributaries Fish Consumption		servoir Acres)	River (Miles)
Mercury in Fish Tissue - Total Impaired Size by Water Type:			197.26

Chowan River and Dismal Swamp Basins

Sources:

Atmospheric Deposition - Toxics

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K19R-05-BEN XEJ - Nottoway River, UT

Cause Location: An unnamed tributary (XEJ) of the Nottoway River in its entirety.

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

During the 2008 cycle, the tributary was assessed as impaired of the Aquatic Life Use due to an impaired benthic community at station 5AXEJ001.73 in 2001.

Additional benthic monitoring occurred in 2013; however, the results were inconclusive (insufficient information to assess).

Cause Assessment Unit / Water Name / Location Desc. Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K19R_XEJ01A04 / XEJ - UT to Nottoway River / Headwaters 5A Benthic Macroinve to mouth at Nottoway River Bioassessments	ertebrates	2008	L	2.88
XEJ - Nottoway River, UT Aquatic Life	Estuary (Sq. Miles)		servoir cres)	River (Miles)
Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water T	ype:			2.88

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K19R-06-BAC **Nottoway River**

Cause Location: Town of Jarrett intake to Stony Creek City / County: Greensville Co. Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2020 cycle the segment became impaired for E.coli with an exceedance rate of 5/30 at station 5ANTW078.20.

Cycle

TMDL

13.84

First Cause Dev. Water Listed Priority Size Assessment Unit / Water Name / Location Desc. Category Cause Name 2020 13.84 VAP-K19R_NTW01B00 / Nottoway River / Town of Jarrett intake 5A Escherichia coli (E. coli) to Stony Creek Nottoway River Estuary Reservoir River (Sq. Miles) (Acres) (Miles) Recreation Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K19R-07-DO XAD - Buckskin Creek, UT

Cause Location: Tributary XAD from its headwaters to its mouth at Buckskin Creek.

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

During the 2012 cycle, the tributary XAD was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 4/12 at 5AXAD001.59, which is located at the Rt. 1 bridge.

During the 2016 cycle the segment remained impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 5/24 at 5AXAD001.59.

Cycle TMDL

During the 2020 cycle the segment remained impaired for DO with an exceedance rate of 5/24at 5AXAD001.59.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		rst Dev. ted Priority	Water Size
VAP-K19R_XAD01A12 / XAD - Buckskin Creek, UT / Heads to mouth at Buckskin Creek.	• ,		12 L	2.90
XAD - Buckskin Creek, UT		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Dissolved Oxygen - 1		` '	, ,	, ,

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K19R-08-DO XHW - Buckskin Creek, UT

Cause Location: Tributary XHW from its headwaters to its mouth at Buckskin Creek.

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

During the 2012 cycle, the tributary XHW was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of 5/11 at 5AXHW000.38, which is located at the Rt. 692 bridge.

During the 2016 cycle, the segment remained impaired due to a dissolved oxygen exceedance rate of 5/19 at 5AXHW000.38.

During the 2020 cycle the segment had exceedance rates for DO 1/12(S). This was due to 4 new samples collected. It should remain impaired for DO due to the violation rate being so close to exceeding and not a lot of new data to analyze. Follow up monitoring recommended,

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Ī	cycle First isted	TMDL Dev. Priority	Water Size
VAP-K19R_XHW01A12 / XHW - Buckskin Creek, UT / Headwaters to mouth	5C Dissolved Oxygen	2	2012	L	1.63
XHW - Buckskin Creek, UT Aquatic Life		Estuary (Sq. Miles)		servoir cres)	River (Miles)
Dissolved Oxygen - Tot	tal Impaired Size by Water Type:				1.63

Sources:

Dam or Impoundment Natural Conditions - Water

Quality Standards Use Attainability Analyses

Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K19R-09-BAC XHX - Buckskin Creek, UT

Cause Location: Tributary XHX from its headwaters to its mouth at Buckskin Creek.

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2012 cycle, the tributary XHX was impaired of the Recreation Use due to an E. coli exceedance rate of 2/9 at 5AXHX001.19, which is located at the Rt. 709 bridge.

During the 2016 cycle, the segment remained impaired due to an E. coli exceedance rate of 5/21 at 5AXHX001.19.

During the 2020 cycle, the segment remained impaired due to an E. coli exceedance rate of 3/23 at 5AXHX001.19.

Assessment Unit / Water Name / Location [Cause Desc. Category Cause Name	Fi	cle TMDL irst Dev. sted Priority	Water
VAP-K19R_XHX01A12 / XHX - Buckskin Creek, U to mouth at Buckskin Creek	JT / Headwaters 5A Escherichia coli (E. coli)	20	012 L	2.66
XHX - Buckskin Creek, UT Recreation		stuary	Reservoir (Acres)	River (Miles)
Escherichia coli	(E. coli) - Total Impaired Size by Water Type:			2.66

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K19R-10-BAC XHY - Buckskin Creek, UT

Cause Location: Tributary XHY from its headwaters to its mouth at Buckskin Creek.

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2012 cycle, the tributary XHY was impaired of the Recreation Use due to an E. coli exceedance rate of 3/11 at

5AXHY001.08, which is located south of Route 40.

Cycle **TMDL** First Dev. Cause Water Listed Priority Size Category Cause Name Assessment Unit / Water Name / Location Desc. VAP-K19R_XHY01A12 / XHY - Buckskin Creek, UT / Headwaters 5A Escherichia coli (E. coli) 2012 1.61 to mouth at Buckskin Creek

XHY - Buckskin Creek, UT

Recreation

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 1.61

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K19R-11-BAC Moores Swamp

Cause Location: Headwaters to mouth

City / County: Greensville Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2016 cycle, the segment of Moores Swamp from its headwaters to the start of PWS was impaired for the Recreation Use due to an E.coli impairment at station 5AMRS002.31 with an exceedance rate of 6/12.

The impairment was extended to the mouth in the 2018 cycle.

Moores Swamp Recreation		Estuary (Sq. Miles)		ervoir cres)	River (Miles)	_
VAP-K19R_MRS01A08 / Moores Swamp / Headwaters to sta PWS	rt of 5A Escherichia coli (E. coli) 2	2016	L	4.98	
Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	F	isted	Dev. Priority	Water Size	

4.98

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K20R-01-DO White Oak Swamp

Cause Location: The headwaters of White Oak Swamp downstream to its uppermost tributary

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 4C

The mainstems of White Oak Swamp and Butterwood Swamp were initially listed as fully supporting but threatened for dissolved oxygen in the 1998 cycle. Station 5ABTR002.80 (Route 646 bridge) was identified to Virginia for listing consideration because of dissolved oxygen.

During the 2002 cycle, the segment was assessed as partially supporting of the Aquatic Use because of pH exceedances (5ABTR002.80). The DO exceedance rate at this station was acceptable (3/38), but due to DO exceedances throughout the watershed (see below) the segment was extended to include Reedy Creek and Rocky Run Creek. The entire segment was listed for both pH and dissolved oxygen. The impairment was continued in the 2004 cycle.

During the 2006 cycle, two Natural Conditions Assessment studies were performed. The results of the monitoring and study indicated that all creeks should be delisted except for:

Butterwood Creek (DO) from rivermile 14.59 to 4.65; recommended for Class VII Cooks Branch (pH) from rivermile 1.08 to 0.00; recommended for Class VII White Oak Swamp (DO/pH) at the headwaters; recommended for cat 4C

Butterwood Creek from river mile 4.65 (near Route 622) upstream to river mile 14.59 (near Route 643) was reclassified as Class VII swampwaters during the 2010 cycle. The segments remained Category 4C for dissolved oxygen until the swampwater WQS could be developed.

DO violations were documented in this water in 2002. It has since been formally re-classified as a swamp water (Class VII). Per Virginia's Water Quality Standards (9VAC25-260-50), numeric dissolved oxygen standards only apply to Class VII waters when there is sufficient evidence the narrative criterion is not protective of aquatic life uses. To date, this Class VII water has not exhibited a need for a site-specific DO criterion, so the DO impairments for Butterwood Creek and Cooks Branch have been removed.

Cycle TMDI

The headwaters of White Oak Swamp will remain Category 4C.

Aquatic Life			(Sq. Miles)	(Acres		(Miles)
VAP-K20R_WOK02A06 / White Oak Swamp downstrea White Oak Swamp	nite Oak Swamp / The headwa m to its uppermost tributary	ters of 4C Dissolved Oxygen	Estuary	Reserv	oir	2.20
Assessment Unit / Water		Cause Category Cause Name	1	First E Listed Pr	ev. iority	Water Size

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K20R-01-PH White Oak Swamp

Cause Location: Headwaters of White Oak Swamp

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 4C

The mainstems of White Oak Swamp and Butterwood Swamp were initially listed as fully supporting but threatened for dissolved oxygen in the 1998 cycle. Station 5ABTR002.80 (Route 646 bridge) was identified to Virginia for listing consideration because of dissolved oxygen.

During the 2002 cycle, the segment was assessed as partially supporting of the Aquatic Use because of pH exceedances (5ABTR002.80). The DO exceedance rate at this station was acceptable (3/38), but due to DO exceedances throughout the watershed (see below) the segment was extended to include Reedy Creek and Rocky Run Creek. The entire segment was listed for both pH and dissolved oxygen.

During the 2006 cycle, two Natural Conditions Assessment studies were performed. The results of the monitoring and study indicated that all creeks should be delisted for pH except for Cooks Branch (pH) from rivermile 1.08 to 0.00 which was recommended for reclassification as a Class VII swampwater an the headwaters of White Oak Swamp which was considered Category 4C.

During the 2010 cycle, Cooks Branch from river mile 1.08 to its mouth was reclassified as Class VII swampwater. The pH values at 5ACKS000.58 now met the Class VII WQS (0/22) and the segment was delisted. The White Oak Swamp segment remains Category 4C.

		Cycle	TMDL	
	Cause	First	Dev.	Water
Assessment Unit / Water Name / Location Desc.	Category Cause Name	Listed	Priority	Size
VAP-K20R_WOK02A06 / White Oak Swamp / The headwater	s of 4C pH			2.20
White Oak Swamp downstream to its uppermost tributary				

White Oak Swamp

Estuary Reservoir River

(Sq. Miles) (Acres) (Miles)

pH - Total Impaired Size by Water Type:

2.20

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K20R-02-BAC White Oak Swamp

Cause Location: The lower portion of White Oak Swamp

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2018 cycle, the segment of White Oak Swamp was impaired of the Recreation Use due to an E. coli exceedance

rate of 3/12 at 5AWOK012.08.

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAP-K20R_WOK01A00 / White Oak Swamp / Uppermost tributary 5A Escherichia coli (E. coli) 2018 L 14.83

to mouth

White Oak Swamp

Recreation

Estuary Reservoir River (Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 14.83

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K20R-02-DO White Oak Swamp

Cause Location: The lower portion of White Oak Swamp

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

The segment of White Oak Swamp was impaired of the Aquatic Life Use in the 2018 cycle due to a dissolved oxygen

exceedance rate of 3/24 at 5AWOK000.54.

Monitoring at 5AWOK006.54 and 5AWOK012.08 was acceptable with exceedance rates of 1/12 and 0/14, respectively.

Cycle **TMDL** Cause First Dev. Water **Priority** Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Size VAP-K20R_WOK01A00 / White Oak Swamp / Uppermost tributary 5C Dissolved Oxygen 2018 14.83 to mouth White Oak Swamp

White Oak Swamp

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type: 14.83

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K20R-02-PH White Oak Swamp

Cause Location: The lower portion of White Oak Swamp

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

The segment of White Oak Swamp was impaired of the Aquatic Life Use in the 2018 cycle due to a pH exceedance rate of 2/14

at 5AWOK012.08.

Monitoring at 5AWOK000.54 and 5AWOK006.54 was acceptable with exceedance rates of 0/24 and 0/12, respectively.

Cause Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAP-K20R_WOK01A00 / White Oak Swamp / Uppermost tributary 5C pH 2018 L 14.83 to mouth

White Oak Swamp

Aquatic Life

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

pH - Total Impaired Size by Water Type: 14.83

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K21R-03-HG Stony Creek

Cause Location: Stony Creek from Mortar Branch downstream to its mouth.

City / County: Dinwiddie Co. Sussex Co.

Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

During the 2010 cycle, Stony Creek from Mortar Branch to its mouth was assessed as not supporting of the Fish Consumption

Use due to mercury exceedances in flier sunfish and spotted bass during DEQ's 2007 fish tissue sampling.

TMDL Cycle First Dev. Cause Water Listed Priority Size Assessment Unit / Water Name / Location Desc. Category Cause Name VAP-K21R_STO01B00 / Stony Creek / Mortar Branch to mouth 5A Mercury in Fish Tissue 2010 L 8.36

Merged in the 2018 cycle.

Stony Creek
Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Mercury in Fish Tissue - Total Impaired Size by Water Type:

8.36

Sources:

Atmospheric Deposition - Source Unknown

Toxics

Chowan River and Dismal Swamp Basins

Cause Group Code: K21R-05-BAC Mortar Branch

Cause Location: Headwaters to mouth at Stony Creek

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2014 cycle, Mortar Branch was assessed as impaired of the Recreation Use due to an E. coli exceedance rate of 4/11 at station 5AMTR001.65, which is located at the Route 626 bridge.

During the 2020 cycle the segment remained impaired for E.coli with an exceedance rate of 8/12 at station 5AMTR001.65.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K21R_MTR01A14 / Mortar Branch / Headwaters to mouth Stony Creek	n at 5A Escherichia coli (E. coli)	2014	Н	6.12
Mortar Branch Recreation		Estuary (Sq. Miles)		servoir cres)	River (Miles)
Escherichia coli (E. coli) - Tota	al Impaired Size by Water Type:				6.12

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K21R-06-BAC **Stony Creek**

Cause Location: Stony Creek from Mortar Branch downstream to its mouth.

City / County: Dinwiddie Co. Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2016 cycle, the segment from Mortar Branch to Snake became impaired for the Recreation Use due to E.coli

exceedances of 3/12 at 5ASTO06.99.

The impairment was expanded to the mouth in the 2018 cycle based on an E. coli exceedance rate of 4/36 at 5ASTO001.20.

During the 2020 cycle the segment remained impaired for E.coli with an exceedance rate of 7/36 at station 5ASTO001.20.

Cycle **TMDL** First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size VAP-K21R_STO01B00 / Stony Creek / Mortar Branch to mouth Escherichia coli (E. coli) 2016 L 8.36

Merged in the 2018 cycle.

Stony Creek Estuary River Reservoir (Sq. Miles) (Acres) (Miles) Recreation 8.36

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K21R-07-PH **Chamberlains Bed**

Cause Location: Start of unnamed pond to the mouth at Stony Creek

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

During the 2016 cycle, the segment was impaired for the Aquatic Life Use due to a pH exceedance rate of 2/12 at

5ACBC000.58.

TMDL Cycle First Dev. Cause Water Listed Priority Size Assessment Unit / Water Name / Location Desc. Category Cause Name VAP-K21R_CBC01A16 / Chamberlains Bed / start of the pond to 5C pH 2016 L 1.32 mouth at Stony Creek Chamberlains Bed **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) **Aquatic Life**

1.32

pH - Total Impaired Size by Water Type:

Sources:

Natural Conditions - Water Quality Standards Use **Attainability Analyses** Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K21R-08-DO Chamberlains Bed

Cause Location: Headwaters to Wheelers Pond

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

During the 2016 cycle, the segment was impaired for the Aquatic Life Use due to a dissolved oxygen exceedance rate of 3/11

at 5ACBC005.79.

TMDL Cycle First Dev. Cause Water Listed Priority Size Assessment Unit / Water Name / Location Desc. Category Cause Name VAP-K21R_CBC03A16 / Chamberlains Bed / From the 5C Dissolved Oxygen 2016 L 2.82 headwaters to Wheelers Pond

Chamberlains Bed

Estuary Reservoir River

Aquatic Life (Sq. Miles) (Acres) (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type: 2.82

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K21R-08-PH Chamberlains Bed

Cause Location: Headwaters to Wheelers Pond

City / County: Dinwiddie Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

During the 2016 cycle, the segment was impaired for the Aquatic Life Use due to a pH exceedance rate of 3/11 at

5ACBC005.79.

TMDL Cycle First Dev. Cause Water Listed Priority Size Assessment Unit / Water Name / Location Desc. Category Cause Name 2016 VAP-K21R_CBC03A16 / Chamberlains Bed / From the 5C pH L 2.82

headwaters to Wheelers Pond

Chamberlains BedEstuaryReservoirRiverAquatic Life(Sq. Miles)(Acres)(Miles)

pH - Total Impaired Size by Water Type: 2.82

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K22R-03-BAC Sappony Creek

Cause Location: Sappony Creek from UT at powerline downstream to Spiers Pond.

City / County: Dinwiddie Co. Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

Sappony Creek from the headwaters to Spiers Pond was assessed as impaired of the Recreation Use during the 2006 due to an E. coli violation rate of 3/12 at 5ASAP005.54. In the 2010 cycle, the impairment was shortened to begin at Mill Run Branch because the E. coli rate at 5ASAP013.69 was acceptable (1/20). The violation rate was 3/13 during the 2012 cycle; therefore, the segment was returned to its original length.

During the 2016 cycle, the segment was shortened and split to exclude the headwaters portion which was no longer impaired for E.coli (VAP-K22R-SAP01C16); the upper portion of Sappony Creek was partially delisted. The portion from the UT at the power line downstream to Spiers Pond remained impaired for Recreation Use due to an E.coli violation of 5/23 at station 5ASAP013.69. 5ASAP005.54 was fully supporting for all that it was monitored for.

During the 2020 cycle the segment remained impaired for E.coli at station 5ASAP007.77(4/12) and 5ASAP013.69(8/24)

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		First isted	Dev. Priority	Water Size
VAP-K22R_SAP01A00 / Sappony Creek / UT at powerline to Spiers Pond.	5A Escherichia coli (E. coli)	2	2006	L	11.86
Sappony Creek		Estuary	Res	servoir	River
Recreation		(Sq. Miles)	(A	cres)	(Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

11.86

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K22R-04-BAC Sappony Creek

Cause Location: Spiers Pond Dam to mouth at Stony Creek

City / County: Dinwiddie Co. Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2016 cycle, the segment became impaired for the Recreation Use due to an E.coli exceedance rate of 4/23 at

5ASAP001.46.

TMDL Cycle First Dev. Cause Water Listed Priority Size Assessment Unit / Water Name / Location Desc. Category Cause Name VAP-K22R_SAP01B00 / Sappony Creek / Spiers Pond dam to 5A Escherichia coli (E. coli) 2016 4.35 mouth at Stony Creek

Sappony Creek
Recreation
Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 4.35

Sources:

Agriculture Non-Point Source Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K23R-01-BAC Arthur Swamp

Cause Location: Arthur Swamp from its RM 4.66 to its mouth

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2016 cycle, Arthur Swamp from the I-85 bridge to its mouth was listed for Recreation Use due to E.coli exceedances

(2/12).

The impairment was extended to its mouth in the 2018 cycle.

During the 2020 cycle the segment remained impaired for E.coli with an exceedance rate of 2/12 at station 5AATH003.28. This cycle the segment was shortened to exclude the upper portion of Arthur Swamp.

Cause Assessment Unit / Water Name / Location Desc. Category Cause Name	Cyc Fin List		Water Size
VAP-K23R_ATH01C20 / Arthur Swamp / RM 4.669 to the mouth 5A Escherichia coli (E. coli)	201	6 L	4.66
Arthur Swamp	Estuary	Reservoir	River
Recreation	(Sq. Miles)	(Acres)	(Miles)
Escherichia coli (E. coli) - Total Impaired Size by Water Type:			4.66

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K23R-03-BAC **XDV - Nebletts Mill Run. UT**

Cause Location: An unnamed tributary (XDV) of Nebletts Mill Run.

City / County: Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Nebletts Run from the Millpond downstream to the mouth and Tributary XDV had been considered not supporting of the Recreation Use. During the 2006 cycle, the fecal coliform exceedance rate at 5ANBT001.26 was acceptable (2/19); therefore, Nebletts Mill Run was delisted. Tributary XDV continued to be impaired with a fecal coliform instantaneous exceedance rate of 10/17 and an E. coli exceedance rate of 2/2 at station 5AXDV000.46. The bacteria TMDL was due in 2016.

The impairment converted to E. coli during the 2008 cycle. The exceedance rate was 7/13 during the 2010 cycle. The TMDL was developed during the 2012 cycle and was approved by the EPA on 9/20/2010; therefore, the stream is Category 4A.

During the 2020 cycle the segment remained impaired for E.coli with an exceedance rate of 8/12.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K23R_XDV01A02 / XDV - UT to Nebletts Mill Run / An unnamed tributary (XDV) of Nebletts Mill Run from its headwaters its mouth.	4A Escherichia coli (E. coli) s to	2006	L	1.78

XDV - Nebletts Mill Run, UT **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) Recreation

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 1.78

Sources:

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K23R-04-BAC Jones Hole Swamp/Moores Swamp and all tributaries

Cause Location: Lower Jones Hole Swamp/Moores Swamp and tributaries City / County: Dinwiddie Co. Prince George Co. Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2010 cycle, the Jones Hole Swamp watershed was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 5/22 at 5AJNH001.73, which is located at the Route 637 bridge.

The violation rate was 6/24 during the 2014 cycle.

During the 2016 cycle, the segment was split to partially delist the headwaters portion of Jones Hole Swamp (VAP-K23R_JNH01B16 and VAP-K23R_JNH01C16.) The lower portion remains impaired for the Recreation use due to E.coli exceedances:

5ACOB000.92 - 2/12 5AJNH001.73 - 11/24 5AJNH004.42 - 2/12

During the 2020 cycle the segment remained impaired for E.coli at all stations.

Cvcle **TMDL** Cause First Dev. Water Category Cause Name Listed **Priority** Size Assessment Unit / Water Name / Location Desc. 70.67 VAP-K23R JNH01A98 / Jones Hole Swamp/Moores Swamp Escherichia coli (E. coli) 2010

watershed / Lower Jones Hole Swamp / Moores Swamp and tributaries.

Jones Hole Swamp/Moores Swamp and all tributaries Reservoir River Estuary (Sq. Miles) (Acres) (Miles) Recreation

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 70.67

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K23R-05-BAC Gosee Swamp and Tributaries

Cause Location: Gosee Swamp/Indian Creek and all of its tributaries below rivermile 6.88

City / County: Prince George Co. Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2014 cycle, lower Gosee Swamp was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 2/12 at 5AGSE001.35, which is located at the Rt. 602 bridge.

No new data since 2014 cycle.

During the 2020 cycle the segment remained impaired for E.coli with an exceedance rate of 6/12 at station 5AGSE003.12.

Gosee Swamp and Tributaries		Estuary (Sa. Miles)	Reserv (Acres		River (Miles)
VAP-K23R_GSE01A98 / Gosee Swamp and tributaries / Gosee Swamp/Indian Swamp and all its tributaries below rivermile 6.88.	5A Escherichia coli (E. coli)	20)14	L	27.71
Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	F	irst [MDL Dev. riority	Water Size

Recreation (Sq. Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 27.71

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K23R-09-BAC Fox Branch

Cause Location: Fox Branch mainstem

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2018 cycle, Fox Branch was impaired of the Recreation Use due to an E. coli exceedance rate of 2/12 at

5AFXB001.27, which is located at the Route 667 bridge.

Escheric	nia coli (E. coli) - Total Impaired Size by Water	Type:		3.45
Recreation		(Sq. Miles)	(Acres)	(Miles)
Fox Branch		Estuary	Reservoir	River
AP-K23R_FXB01A18 / Fox Branch / Headwanty Creek	adwaters to mouth at 5A Escherichia coli	(E. coli)	2018 L	3.45
Assessment Unit / Water Name / Lo	Cause Category Cause Nam		Cycle TMDL First Dev. isted Priority	Water Size

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K23R-10-BAC **Rowanty Creek**

Cause Location: Rowanty Creek mainstem downstream of Gravelly Run. City / County: Dinwiddie Co. Prince George Co. Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2012 cycle, Rowanty Creek from Little Cattail Creek to the mouth was assessed as impaired of the Recreation Use due to an E. coli exceedance rate of 2/12 at 5AROW004.72, which is located at the Route 618 bridge. Continued monitoring was recommended to confirm the impairment because all other stations in the segment were acceptable.

Additional monitoring was conducted in the 2014 cycle at station 5AROW013.14, which is located at the Route 605 bridge. The exceedance rate was unacceptable (3/24); therefore, the segment was extended upstream to Gravelly Run.

During the 2016 cycle E.coli monitoring continued to be impaired:

5AROW002.41 - 4/12 5AROW004.72 - 8/24 5AROW008.64 - 0/12 (S) 5AROW013.14 - 2/12

Cycle Cause First Dev. Water Listed Priority Size Assessment Unit / Water Name / Location Desc. Category Cause Name VAP-K23R_ROW03B10 / Rowanty Creek / Rowanty Creek Escherichia coli (E. coli) 2012 14.07

downstream of Gravelly Run.

Rowanty Creek **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) Recreation

> Escherichia coli (E. coli) - Total Impaired Size by Water Type: 14.07

TMDL

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K23R-11-BAC Hatcher Run

Cause Location: Pond at Rt. 627 to mouth at Rowanty Creek

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2020 cycle the segment became impaired for E.coli with an exceedance rate of 5/24 at station 5AHRA002.92.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		Cycle First Listed	Dev. Priority	Water Size
VAP-K23R_HRA01B10 / Hatcher Run / Pond at Rt. 627 to mo at Rowanty Creek	outh 5A Escherichia coli (E. coli)		2020	L	16.22
Hatcher Run Recreation		Estuary (Sq. Miles)		ervoir cres)	River (Miles)
	al Impaired Size by Water Type:				16.22

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K23R-12-BAC Warren Swamp

Cause Location: Mainstem of Warren Swamp

City / County: Dinwiddie Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2020 cycle the segment became impaired for E.coli with an exceedance rate of 5/24 at station 5AWRN000.42

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	F	Sycle TMDL First Dev. isted Priority	Water Size
VAP-K23R_WRN01A18 / Warren Swamp / Mainstem of Warre Swamp	en 5A Escherichia coli (E. coli) 2	2020 L	1.21
Warren Swamp Recreation		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli (E. coli) - Tota	al Impaired Size by Water Type:			1.21

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K23R-13-BAC Joseph Swamp, UT

Cause Location: Headwaters to mouth at Joseph Swamp

City / County: Prince George Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2020 cycle the segment was Impaired due to E.coli exceedances at station 5AXFZ000.38 (4/10)

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Firs Liste	t Dev.	Water Size
VAP-K23R_XFZ01A08 / Joseph Swamp, UT / Headwaters mouth at Joseph Swamp	to 5A Escherichia coli (E. coli)	2020) L	1.39
Joseph Swamp, UT Recreation			Reservoir (Acres)	River (Miles)
Escherichia coli (E. coli) -	Total Impaired Size by Water Type:			1.39

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K24R-03-BAC **Hunting Quarter Swamp**

Cause Location: The mainstem of Hunting Quarter Swamp.

City / County: Southampton Co. Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2018 cycle, Hunting Quarter Swamp was assessed as impaired of the Recreation Use due to an E. coli exceedance rates of 4/24 at station 5AHQS006.22 and 5/12 at station 5AHQS009.57.

Assessment Unit / Water Name / Location Desc.	Caus Catego	e ory Cause Name	Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K24R_HQS01A98 / Hunting Quarter Swamp / Headwaters mouth	s to 5A	Escherichia coli (E. coli)	2008	L	16.67
VAP-K24R_HQS01B08 / Hunting Quarter Swamp Tributaries / tributaries to Hunting Quarter Swamp. Includes Thweatt Branch, Anderson Branch, and Lees Branch	All 5A	Escherichia coli (E. coli)	2020	L	56.97

Hunting Quarter Swamp	Estuary	Reservoir	River	
Recreation	(Sq. Miles)	(Acres)	(Miles)	
Escherichia coli (E. coli) - Total Impaired Size by Water Type:			73.64	

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K24R-04-BAC **Nottoway River**

Cause Location: Nottoway River from Nebletts Mill Run downstream to Three Creek

City / County: Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2016 cycle, the Nottoway River from Nebletts Mill Run to Three Creek was impaired of the Recreation Use due to an

E.coli exceedance rate of 3/12 at station 5ANTW052.83.

The impairment was extended upstream to Nebletts Mill Run in the 2018 cycle.

Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size 5A Escherichia coli (E. coli) 2016 19.17

VAP-K24R_NTW04B00 / Nottoway River / Nebletts Mill Run

downstream to Three Creek

State Scenic River

Merged in the 2018 cycle

Nottoway River Estuary Reservoir River (Sq. Miles) (Acres) (Miles) Recreation

> Escherichia coli (E. coli) - Total Impaired Size by Water Type: 19.17

Cycle

TMDL

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K24R-05-BAC Thweatt Branch and Tributaries

Cause Location: Thweatt Branch watershed
City / County: Southampton Co. Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2016 cycle, Thweatt Branch and its tributaries was impaired for the Recreation Use due to an E.coli exceedance

rate of 4/11 at station 5ATWT001.19.

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAP-K24R_TWT01A16 / Thweatt Branch Tributaries / Headwaters 5A Escherichia coli (E. coli) 2016 L 7.26

to the mouth

Thweatt Branch and Tributaries

Estuary Reservoir River

(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 7.26

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K25R-02-BAC Raccoon Creek

Cause Location: The entire mainstem of Raccoon Creek.

City / County: Southampton Co. Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Raccoon Creek was initially listed as fully supporting but threatened of the Recreation use goal during the 1998 303(d) cycle. It was then identified to Virginia for listing consideration. During the 2002 303(d) cycle, the segment was downgraded to impaired; therefore, the TMDL was due in 2010.

The TMDL was completed as part of the Chowan River Bacteria TMDL. The TMDL was approved by the EPA on 10/14/2005 and the segment is considered Category 4A.

During the 2008 cycle, the impairment converted to E. coli. However, an upstream station at 5ARCN012.80 had an acceptable exceedance rate (1/12.)

The exceedance rate at 5ARCN003.36 was 7/32 in the 2010 cycle.

During the 2016 cycle, the segment remained impaired for E.coli exceedances at station 5ARCN014.72 (2/12).

Assessment Unit / Water Name /	Location Desc.	Cause Category Cause Name	Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K25R_RCN01A02 / Raccoon Cree Raccoon Creek.	ek / The entire mainstem	of 4A Escherichia coli (E. coli)	2008	L	19.90

Raccoon Creek **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) Recreation Escherichia coli (E. coli) - Total Impaired Size by Water Type: 19.90

Sources:

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K26R-01-BAC **Three Creek**

Cause Location: Three Creek from its start at the confluence of Cooks Branch and Tryall Creek downstream to Cattail Creek.

City / County: Greensville Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2018 cycle, upper Three Creek was impaired of the Recreation Use due to an E.coli exceedance rate of 2/12 at 5ATRE044.66, which is located at the Route 605 bridge.

The stream is located within the study area for the downstream Three Creek Bacterial TMDL (K26R-03-BAC), which was approved by the EPA on 9/28/2012 and by the SWCB on 3/25/2013. The impairment is proposed for nesting.

		Cycle			
	Cause	First	Dev.	Water	
Assessment Unit / Water Name / Location Desc.	Category Cause Name	Listed	Priority	Size	
VAP-K26R_TRE01C18 / Three Creek / Start of Three Creek downstream to Cattail Creek	4A Escherichia coli (E. coli)	2018	L	6.55	

Three Creek **Estuary** Reservoir River (Sq. Miles) (Miles) (Acres) Recreation 6.55

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Municipal Point Source Discharges

Non-Point Source

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Chowan River and Dismal Swamp Basins

Cause Group Code: K26R-01-DO Three Creek

Cause Location: Three Creek from its start at the confluence of Cooks Branch and Tryall Creek downstream to Cattail Creek.

City / County: Greensville Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

During the 2018 cycle, upper Three Creek was impaired of the Aquatic Life Use due to a dissolved oxygen exceedance rate of

2/12 at 5ATRE044.66, which is located at the Route 605 bridge.

		Cycle	LINIDL	
	Cause	First	Dev.	Water
Assessment Unit / Water Name / Location Desc.	Category Cause Name	Listed	Priority	Size
VAP-K26R_TRE01C18 / Three Creek / Start of Three Creek	5C Dissolved Oxygen	2018	L	6.55

downstream to Cattail Creek

Three Creek

Aquatic Life

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type: 6.55

Outle TMDI

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K26R-02-BAC Three Creek

Cause Location: From Otterdam Swamp downstream to Browns Branch.

City / County: Greensville Co. Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2006 cycle, Three Creek from Otterdam Swamp to Browns Branch was assessed as not supporting of the Recreation Use support goal based on E. coli exceedances at the Route 615 bridge (5ATRE022.05). The exceedance rate was 3/23 during the 2010 cycle.

The Three Creek TMDL was completed and was approved by the EPA on 9/28/2012 and by the SWCB on 3/25/2013. The AU is considered Category 4A.

Cycle TMDL

5.43

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	First Listed	Dev. Priority	Water Size
VAP-K26R_TRE02B98 / Three Creek / Otterdam Swamp to Browns Branch.	4A Escherichia coli (E. coli)	2006	L	5.43
Three Creek Recreation	Estuar (Sq. Mile	-	servoir Acres)	River (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Municipal Point Source Discharges Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K26R-04-BAC Maclins Creek

Cause Location: Maclins Creek in its entirety.

City / County: Greensville Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2012 cycle, Maclins Creek was impaired of the Recreation Use due to an E.coli exceedance rate of 2/15 at 5AMCC000.08, which is located at the Route 610 bridge.

The stream is located within the study area for the Three Creek Bacterial TMDL, which was approved by the EPA on 9/28/2012 and by the SWCB on 3/25/2013. Maclins Creek is within the study watershed for K26R-02-BAC and the impairment is considered nested.

The E. coli exceedance rate was 6/12 in the 2018 cycle.

Assessment Unit / Water Name / Location Desc.	Cause	e ory Cause Name	First Listed	Dev. Priority	Water Size	
VAP-K26R_MCC01A00 / Maclins Creek / Headwaters to mouth Three Creek	at 4A	Escherichia coli (E. coli)	2012	L	8.80	

Maclins CreekEstuaryReservoirRiverRecreation(Sq. Miles)(Acres)(Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 8.80

Sources:

Municipal Point Source Discharges Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K27R-02-BAC Three Creek - Lower & Upper & UT to Angelico Cr

Cause Location: This cause encompasses the area from the confluence of Chatman Branch (RM 20.95) downstream to the

confluence with Nottoway River (RM 0.00), to include UT to Angelico Creek.

City / County: Southampton Co. Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Escherichia coli (E. coli) / 5A

The Recreational Use is impaired based on the E Coli data exceedance of the swimming criteria indicator at Stations 5ATRE008.48(11 violations / 35 observations) and 5ATRE016.02 (11 violations / 34 observations). 2018 nested new impairment at station 5AXEE001.44 with 3 viol / 11 obs. A Bacteria Total Maximum Daily Load was developed for Three Creek, Flat Swamp, Tarrara Creek, Mill Swamp, and Darden Mill Run in Southampton, Sussex, Greensville, Brunswick Counties and the City of Emporia, Virginia for E. Coli on 9/28/2012

_	Caus Catego	e ory Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAT-K27R_ANG01A12 / Angelico Creek / Lower portion of Angelico Creek south of Highway 58 near Drewryville.	5A	Escherichia coli (E. coli)		2020	L	1.90
VAT-K27R_TRE01A00 / Three Creek - Upper / From confluence of Chatman Branch (RM 19.26) downstream to above Southampton Correctional Farm at Rt 308 crossing (RM 10.4).	f 4A	Escherichia coli (E. coli)		2006	L	9.17
VAT-K27R_TRE02A00 / Three Creek - Lower / Lower portion of Three Creek. From area of Southampton Correctional Center at Rt 308 crossing (RM 10.4) downstream to confluence with Nottoway River (RM 0.00).	4A	Escherichia coli (E. coli)		2002	L	10.67
VAT-K27R_XEE01A18 / Unnamed Tributary to Angelico Creek / Evaluated UT along Angelico Cr south of Route 658 crosses Pinopolis Rd (Rt 653).	4A	Escherichia coli (E. coli)		2018	L	4.06
Three Creek - Lower & Upper & UT to Angelico Cr Recreation			Estuary (Sq. Miles)		servoir cres)	River (Miles)
Escherichia coli (E. coli) - Total Im	paire	d Size by Water Type:				25.80

Sources:

Crop Production (Crop Land Non-Point Source Source Unknown Wildlife Other than or Dry Land) Waterfowl

Chowan River and Dismal Swamp Basins

Cause Group Code: K27R-03-BEN Applewhite Swamp

Cause Location: This cause encompasses the area from the start of swamp (near Harrells Mill) downstream to confluence with

Three Creek. Located south of Mason & northeast of Arringdale.

City / County: Southampton Co. Sussex Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

The Aquatic Life Use impairment is retained based on the Benthic population rating from the Benthic ProbMon-Benthic IM [MI:S&F-'01, S&F-'02]. No data within Assessment window. Impairment retained until new data collected.

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size 2008 VAT-K27R_APW01A04 / Applewhite Swamp / Located south of Benthic Macroinvertebrates 8.16 Bioassessments Mason & northeast of Arringdale, Segment extends from start of swamp (near Harrells Mill) downstream to confluence with Three Creek.

Applewhite Swamp

Aquatic Life

Estuary Reservoir River (Sq. Miles) (Acres) (Miles)

Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:

8.16

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K27R-05-BEN Three Creek - Upper

Cause Location: This cause encompasses the area from the confluence of Chatman Branch (RM 19.26) downstream to above

Southampton Correctional Farm at Rt 308 crossing (RM 10.4).

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

The Aquatic Life Use impairment is retained from the 2004 Assessment based on benthic monitoring assessment which indicates impairment (MI in Fall-'04] based on data at DEQ (AQM & Bio) station @ 5ATRE016.02.

Assessment Unit / Water Name / Location Desc.	Cause Catego	e ory Cause Name	Cycle First Listed	TMDL Dev. Priority	Water Size
VAT-K27R_TRE01A00 / Three Creek - Upper / From confluence Chatman Branch (RM 19.26) downstream to above Southampton Correctional Farm at Rt 308 crossing (RM 10.4).	e of 5A	Benthic Macroinvertebrates Bioassessments	2006	L	9.17

Three Creek - Upper

Aquatic Life

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type: 9.17

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K28R-01-BAC Mill Swamp

Cause Location: This cause encompasses the Main stem of Mill Swamp only, from headwaters downstream to the confluence with

the Nottoway River. Tributary to Nottoway R, downstream of PWS. W of Delaware.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

The Recreation Use is impaired based on the E.coli data at Station 5AMSP000.16 with 3 viol / 11 obs. A TMDL was established for E. Coli for Three Creek, Flat Swamp, Tarrara Creek, Mill Swamp, and Darden Mill Run in

Southampton, Sussex, Greensville, Brunswick Counties and the City of Emporia, Virginia on 9/28/2012.

Assessment Unit / Water Name	/ Location Desc.

VAT-K28R_MSP01A06 / Mill Swamp / Tributary to Nottoway R, downstream of PWS. W of Delaware. Main stem Mill Swamp only, from headwaters downstream to the confluence with the Nottoway

Cause Category Cause Name Cycle TMDL First Dev. Water Listed Priority Size

4A Escherichia coli (E. coli) 2006 L 10.49

Mill Swamp

Recreation

Estuary Reservoir River (Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 10.49

Sources:

River.

Crop Production (Crop Land or Dry Land)

Chowan River and Dismal Swamp Basins

Cause Group Code: K28R-01-PH Mill Swamp

Cause Location: Tributary to Nottoway R, downstream of PWS. W of Delaware. Main stem Mill Swamp only, from headwaters

downstream to the confluence with the Nottoway River.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

Aquatic Life Use impairment is retained due to a pH impairment (5 viol / 24 obs) that was recently supporting at Station

5AMSP000.16.

Assessment Unit / Water Name / Location Desc.

Cause
Category Cause Name

5C pH

Cycle TMDL First Dev. Water Listed Priority Size

10.49

River

(Miles)

10.49

2012

VAT-K28R_MSP01A06 / Mill Swamp / Tributary to Nottoway R, downstream of PWS. W of Delaware. Main stem Mill Swamp only, from headwaters downstream to the confluence with the Nottoway River.

Mill Swamp

Estuary Reservoir (Sq. Miles) (Acres)

pH - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K28R-02-BEN **Buckhorn Swamp**

Cause Location: This cause encompasses the segment of Buckhorn Swamp that is near Pope Count, segment is located between

State Hwy 652 and US Hwy 58. Segment ends below State Hwy 657.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

The Aquatic Life Use is impaired based on the Benthic population rating from the Benthic ProbMon-sample events [MI:F-'06,

VI:S-'06] at Station 5ABKH005.16.

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size 2008 VAT-K28R_BKH01A08 / Buckhorn Swamp / Segment of Buckhorn 5A Benthic Macroinvertebrates 5.68 Swamp that is near Pope Count, segment is located between State Bioassessments Hwy 652 and US Hwy 58. Segment ends below State Hwy 657.

Buckhorn Swamp Estuary Reservoir River (Sq. Miles) (Acres) (Miles) **Aquatic Life**

5.68

Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K28R-04-BEN Unnamed Tributary to Mill Swamp

Cause Location: This cause encompasses the tributary running S / SE from Mill Swamp. To the east of Darden Pond and crosses

RT 749 perpendicular.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

Benthic data is impaired at station 5AXEC000.76 (X-Trib to Mill Swamp). Spring Score 2012 = 17.1, Fall Score 2012 = 37.5. This was a 2012 probabilistic monitoring site. This stream has very steep banks but is very shallow with loosely packed sediment and little habitat available for benthic organisms to colonize. Assessed with VCPMI score.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Cycle TMDL First Dev. Listed Priority	Water Size			
VAT-K28R_XEC01A14 / Unnamed Tributary To Mill Swamp / Tributary running S / SE from Mill Swamp. To the east of Darden Pond and crosses RT 749 perpendicular.	5A Benthic Macroinvertebrates Bioassessments	2014 L	1.85			
Unnamed Tributary to Mill Swamp Aquatic Life	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)			
Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:						

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K28R-05-BAC **Buckhorn Swamp**

Cause Location: This cause encompasses the segment of Buckhorn Swamp near Pope that crosses over Route 652.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

The Recreation Use is impaired based on E.coli data collected at Station 5BKH003.89 with 4 viol / 11 obs.

Cycle **TMDL** First Cause Dev. Water Priority Listed Size Assessment Unit / Water Name / Location Desc. Category Cause Name 2012 4.22 VAT-K28R_BKH01B12 / Buckhorn Swamp / Segment of Buckhorn 5A Escherichia coli (E. coli) Н Swamp near Pope that crosses over Route 652.

Buckhorn Swamp Estuary Reservoir River (Sq. Miles) (Acres) (Miles) Recreation 4.22

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K28R-05-DO Buckhorn Swamp

Cause Location: This cause encompasses the segment of Buckhorn Swamp near Pope that crosses over Route 652.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

Aquatic Life Use is impaired based on DO at Station 5BKH003.89 with 4 viol / 12 obs. The DO impairment is thought to be from

natural conditions. There is currently no natural conditions report.

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAT-K28R_BKH01B12 / Buckhorn Swamp / Segment of Buckhorn 5C Dissolved Oxygen 2014 M 4.22

Swamp near Pope that crosses over Route 652.

Buckhorn Swamp

Aquatic Life

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type: 4.22

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K28R-05-PH **Buckhorn Swamp**

Cause Location: This cause encompasses the segment of Buckhorn Swamp near Pope that crosses over Route 652.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

The pH impairment is retained from 2016 IR with 3 viol/ 24 obs at station 5ABKH003.89. 2018 IR has 1 viol / 12 obs. Data that fell outside of the 2018 IR window is why violation rate is below 10%. Need additional data to delist. Impairment thought to be from natural causes.

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size VAT-K28R_BKH01B12 / Buckhorn Swamp / Segment of Buckhorn 5C pH 2016 4.22 Swamp near Pope that crosses over Route 652.

Buckhorn Swamp River **Estuary** Reservoir (Sq. Miles) (Acres) (Miles) **Aquatic Life** pH - Total Impaired Size by Water Type: 4.22

Sources:

Naturally Occurring Organic Acids

Chowan River and Dismal Swamp Basins

Cause Group Code: K28R-06-BAC Nottoway Swamp

Cause Location: This cause encompasses the segment of Nottoway Swamp near Route 611.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

Recreation Use is impaired in the 2018 IR. In 2016 IR recreation use was supporting with E.coli data from Station 5ANTT002.96 with 2 viol / 23 obs and now in the 2018 IR data dropped off from 2009 and 2010. Data collected in 2014 now violates with 2 viol / 12 obs. Data outside of assessment after 2014 also violate. Therefore in the 2018 IR this segment will be listed for Ecoli.

Assessment Unit / Water Name / Loc	Cause ation Desc. Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAT-K28R_NTT01A12 / Nottoway Swamp / Swamp near Route 611	Segment of Nottoway 5A Escherichia coli (E. coli)	2018	L	8.12
Nottoway Swamp		Estuary (Sq. Miles)		servoir	River (Miles)
Recreation Escherich	ia coli (E. coli) - Total Impaired Size by Water Type:	(oq. ivilies)	(^	ores)	8.12

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K28R-06-DO Nottoway Swamp

Cause Location: This cause encompasses the segment of Nottoway Swamp near Route 611.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

Aquatic Life Use is impaired based on DO and pH exceedances at Station 5ANT002.96. DO - 5 viol / 12 obs .

Assessment Unit /	Water Name / Location Desc.	Cause Category Cause Name		First .isted	Dev. Priority	Water Size
VAT-K28R_NTT01A12 Swamp near Route 61	2 / Nottoway Swamp / Segment of Nottow 1	ay 5C Dissolved Oxygen	:	2012	L	8.12
Nottoway Swamp			Estuary (Sq. Miles)		ervoir cres)	River (Miles)
Aquatic Life			(Oq. Miles)	() (5100)	(IVIIICO)

Cycle TMDL

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K28R-06-PH Nottoway Swamp

Cause Location: This cause encompasses the segment of Nottoway Swamp near Route 611.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

Aquatic Life Use is impaired based on pH exceedances at Station 5ANT002.96 with 2 viol / 12 obs.

Assessment Unit / Water Name / Location Desc.	Cause Assessment Unit / Water Name / Location Desc. Category Cause Name				Water Size
VAT-K28R_NTT01A12 / Nottoway Swamp / Segment of Not Swamp near Route 611	toway 5C pH	2	2012	L	8.12
Nottoway Swamp Aquatic Life		Estuary (Sq. Miles)		ervoir res)	River (Miles)
pH - Total Impaired Size by Water Type:					8.12

Cycle TMDL

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K28R-07-BAC Nottoway River - Upper

Cause Location: From upstream intersection with watershed boundary (near Three Cr. confluence, RM 36.50) downstream to 5

miles upstream of Courtland (RM 32.00, end of PWS area - downstream of confluence with Buckhorn Swamp at

Vicks Isl.).

City / County: Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

The Recreation Use is impaired for the 2020 IR cycle with 5 viol / 33 obs at station 5ANTW035.44 and 1 viol / 1 obs at station

5ANTW035.62.

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size
AT-K28R NTW01A00 / Nottoway River - Upper / From upstream 5A Escherichia coli (E. coli) 2020 L 4.44

VAT-K28R_NTW01A00 / Nottoway River - Upper / From upstream intersection with watershed boundary (near Three Cr. confluence, RM 36.50) downstream to 5 miles upstream of Courtland (RM 32.00, end of PWS area - downstream of confluence with Buckhorn Swamp at Vicks Isl.).

Nottoway River - Upper

Recreation

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

4.44

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K29R-01-BAC Seacorrie Swamp, German Swamp, XDW and XDX

Cause Location: Seacorrie Swamp, portion of German Swamp, UT to Assamoosick Swamp XDW, and UT to Seacorrie Swamp XDX.

City / County: Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

In 1998, the entire mainstem of Assamoosick Swamp (23.8 miles) was assessed as fully supporting but threatened of the Recreation Use. The segment was later identified to Virginia for listing consideration (station 5AASM013.36).

Assamoosick Swamp from the headwaters to Rt. 607 was downgraded in 2002, however the impairment was shortened in the year to end at the Route 607 bridge due to acceptable fecal coliform levels in this downstream portion (0/3 at 5AASM003.00, 0/13 at 5AASM000.89). The TMDL was due in 2010. In 2002, Black Swamp, Seacorrie Swamp, XDW, and XDX were also considered impaired of the Recreation Use. These TMDLs were due in 2014.

In 2004, German Swamp was added to the impairment. This was due in 2016.

During the 2010 cycle, E. coli monitoring was conducted throughout the watershed. The exceedance rates were acceptable at all stations on Black Swamp and Assamoosick Swamp above the Route 607 bridge; therefore, Black Swamp and the portion of Assamoosick Swamp which had been impaired were delisted. The lower portion of German Swamp remained impaired with an E. coli exceedance rate of 2/11 at 5AGMN000.54, however station 5AGMN003.19 was fully supporting (1/12); therefore, the portion above the upstream-most tributary was delisted. Seacorrie Swamp, XDW and XDX remained listed (5/14 at 5ASRE005.89, 4/21 at 5ASRE002.12, 3/8 at 5AXDW001.85, and 5/8 at 5AXDX001.35).

The Assamoosick Swamp and Tributaries Bacterial TMDL was developed during the 2012 cycle; it was approved by the EPA on 6/3/2010 and by the SWCB on 9/30/2010. The previously delisted segments are considered Category 2C; the impaired segments are Category 4A.

No new data has been collected.

Escherichia coli (E. coli) - Total Impaired Size by Water Type:						13.16
Seacorrie Swamp, German Swamp, XDW and XDX Recreation			Estuary (Sq. Miles)		servoir cres)	River (Miles)
VAP-K29R_XDX01A02 / XDX - Seacorrie Swamp, UT / Unnamed tributary to Seacorrie Swamp	4A	Escherichia coli (E. coli)		2006	L	1.46
$ \begin{tabular}{lllllllllllllllllllllllllllllllllll$	4A	Escherichia coli (E. coli)		2006	L	2.05
VAP-K29R_SRE01A02 / Seacorrie Swamp / Seacorrie Swamp from its headwaters to its mouth	4A	Escherichia coli (E. coli)		2006	L	7.03
VAP-K29R_GMN01A02 / German Swamp / The mainstem of German Swamp from the upstream-most tributary to its mouth.	4A	Escherichia coli (E. coli)		2010	L	2.62
_ `	Causo atego	e ry Cause Name		First Listed	Dev. Priority	Water Size

Sources:

Municipal Point Source Discharges

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K29R-02-BAC Assamoosick Swamp

Cause Location: Assamoosick Swamp from rivermile 2.5 near Mill Run downstream to its mouth

City / County: Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2010 cycle, Assamoosick Swamp from rivermile 2.5 near Mill Run downstream to its mouth was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 2/11 at 5AASM000.89, which is located at the Route 647 bridge.

Cause Assessment Unit / Water Name / Location Desc. Cause Category Caus	Cyc Fir se Name List	st Dev.	Water Size
VAP-K29R_ASM02A02 / Assamoosick Swamp / Start of PWS at 5A Escheric river mile 2.5 to mouth.	chia coli (E. coli) 201	10 L	2.44
Assamoosick Swamp Recreation	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli (E. coli) - Total Impaired Size by	/ Water Type:		2.44

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K29R-03-BAC XGT - Assamoosick Swamp, UT

Cause Location: The UT XGT from its headwaters to its mouth at Assamoosick Swamp.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

During the 2010 cycle, the segment was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate

Outle TMDI

of 2/6 at 5AXGT000.50, which is located at the Route 607 bridge.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	First Liste	Dev.	Water Size
VAP-K29R_XGT01A10 / XGT - Assamoosick Swamp, UT / Headwaters to mouth at Assamoosick Swamp	5A Escherichia coli (E. coli)	2010	L	1.93
XGT - Assamoosick Swamp, UT Recreation			eservoir (Acres)	River (Miles)
Escherichia coli (E. coli) - Tot	al Impaired Size by Water Type:			1.93

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K29R-04-BAC XGS - Assamoosick Swamp, UT

Cause Location: The UT XGS from its headwaters to its mouth at Assamoosick Swamp.

City / County: Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2010 cycle, the segment was assessed as not supporting of the Recreation Use due to an E. coli violation rate of 2/9 at 5AXGS000.96, which is located at the Route 634 bridge.

The stream is within the study area for the Assamoosick Swamp and Tributaries Bacterial TMDL, which was developed during the 2012 cycle. The TMDL was approved by the EPA on 6/3/2010 and by the SWCB on 9/30/2010. The stream is considered nested (Category 4A).

Cause Assessment Unit / Water Name / Location Desc. Cause Category Cause Name		Fi	rcle TMDL rst Dev. sted Priority	Water Size	
VAP-K29R_XGS01A10 / XGS - Assamoosick Swamp, UT / Headwaters to mouth at Assamoosick Swamp	4A Escherichia coli (E. coli)	20)10 L	2.36	
XGS - Assamoosick Swamp, UT		Estuary	Reservoir	River	
Recreation		(Sq. Miles)	(Acres)	(Miles)	
Escherichia coli (E. coli) - Total Impaired Size by Water Type:					

Sources:

Municipal Point Source Discharges Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K30R-01-BAC Darden Mill Run

Cause Location: This cause encompasses the area from headwaters near Newsoms downstream to Windbourne Millpond, near

VA/NC state line.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

The Recreation Use is impaired based on E.coli exceedance of the swimming criteria indicator with 9 violates/33 obs for station 5ADMR008.42. A Bacteria Total Maximum Daily Load was developed for Three Creek, Flat Swamp, Tarrara Creek, Mill Swamp, and Darden Mill Run in Southampton, Sussex, Greensville, Brunswick Counties and the City of Emporia, Virginia. EPA approved 09/28/2012 (PN 10623).

	Cycle	TMDL	
Cause	First	Dev.	Water
Assessment Unit / Water Name / Location Desc. Category Cause Name	Listed	Priority	Size
VAT-K30R_DMR01A02 / Darden Mill Run / From headwaters near 4A Escherichia coli (E. coli)	2006	L	10.72
Newsoms downstream to Windbourne Millpond, near VA/NC state			
line.			

Darden Mill Run

Estuary Reservoir River

(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 10.72

Sources:

Crop Production (Crop Land or Dry Land)

Chowan River and Dismal Swamp Basins

Cause Group Code: K30R-01-DO Darden Mill Run

Cause Location: This cause encompasses the area from headwaters near Newsoms downstream to Windbourne Millpond, near

VA/NC state line.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

Aquatic Life Use is impaired due to depressed DO & pH concentrations below the criteria minimum. Impairment is suspected due to natural swamp conditions present in these waters, low flow and high organic content. Below criteria minimum = 4.0

Cycle

First

Listed

2002

TMDL

Dev.

Priority

Water

Size

10.72

10.72

mg/I. DO = 19 viol / 35 obs and pH 22 viol / 35 obs.

Assessment Unit / Water Name / Location Desc.

Cause
Category Cause Name

VAT-K30R_DMR01A02 / Darden Mill Run / From headwaters near 5C Dissolved Oxygen

Newsoms downstream to Windbourne Millpond, near VA/NC state line.

Darden Mill Run

Estuary Reservoir River
Aquatic Life

(Sq. Miles) (Acres) (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type:

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K30R-01-PCB Nottoway River -Lower Middle

Cause Location: Lower/middle portion of Nottoway River in watershed K30. Segment starts below Route 671 downstream just below

Point Beach.

City / County: Southampton Co.

Use(s): Fish Consumption

Cause(s) / VA Category: PCBs in Fish Tissue / 5A

Fish Tissue samples at station 5ANTW005.07 were impaired for PCBs (18-IM-PCB) using the Blue Catfish species.

Cycle **TMDL** First Dev. Cause Water Listed **Priority** Size Category Cause Name Assessment Unit / Water Name / Location Desc. PCBs in Fish Tissue VAT-K30R_NTW02A08 / Nottoway River -Lower Middle / Middle 2020 L 10.96

portion of Nottoway River in watershed K30. Segment starts below

Route 671 downstream just below Point Beach.

Nottoway River -Lower Middle

Fish Consumption

Reservoir River (Sq. Miles)

(Acres) (Miles)

PCBs in Fish Tissue - Total Impaired Size by Water Type:

10.96

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K30R-01-PH Darden Mill Run

Cause Location: This cause encompasses the area from headwaters near Newsoms downstream to Windbourne Millpond, near

VA/NC state line.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

Aquatic Life Use is impaired due to depressed DO & pH concentrations below the criteria minimum. Impairment is suspected due to natural swamp conditions present in these waters, low flow and high organic content. Below criteria minimum = 4.0

mg/I. DO = 19 viol / 35 obs and pH 22 viol / 35 obs.

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size
AT-K30R DMR01A02 / Darden Mill Run / From headwaters near 5C pH 2004 L 10.72

VAT-K30R_DMR01A02 / Darden Mill Run / From headwaters near 5C pH Newsoms downstream to Windbourne Millpond, near VA/NC state

Newsoms downstream to windbourne Milipond, near VA/NC state line.

Darden Mill Run

Aquatic Life

Estuary Reservoir River (Sq. Miles) (Acres) (Miles)

pH - Total Impaired Size by Water Type:

10.72

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K30R-02-DO **Nottoway River - Lower**

Cause Location: This cause encompasses the lower portion of the Nottoway River in watershed K30. Segment starts below Mill

Creek near Point Beach to VA/NC state line.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5A

DO is not supporting (4 viol / 36 obs) @ 5ANTW003.30 / Special Study and Trend Station and NCDNR station 5NTW-

D0000050-NCDENR (21 viol/ 97 obs).

Cycle **TMDL** Dev. Cause First Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size Dissolved Oxygen 2014 4.54 VAT-K30R_NTW02B14 / Nottoway River - Lower / Lower portion 5A of Nottoway River in watershed K30. Segment starts below Mill Creek

near Point Beach to VA/NC state line.

Nottoway River - Lower

Estuary Reservoir River (Sq. Miles) (Acres) (Miles) **Aquatic Life**

> Dissolved Oxygen - Total Impaired Size by Water Type: 4.54

Sources:

Source Unknown

Appendix 5 - 2285 Final 2020

Chowan River and Dismal Swamp Basins

Cause Group Code: K30R-02-PCB Nottoway River - Lower

Cause Location: Lower portion of Nottoway River in watershed K30. Segment starts below Mill Creek near Point Beach to VA/NC

state line.

City / County: Southampton Co.

Use(s): Fish Consumption

Cause(s) / VA Category: PCBs in Fish Tissue / 5A

17-IM-PCB Fish species utilized for PCB testing at stations 5ANTW003.30 included Blue Catfish.

TMDL Cycle First Dev. Water Cause Listed **Priority** Category Cause Name Size Assessment Unit / Water Name / Location Desc. PCBs in Fish Tissue VAT-K30R_NTW02B14 / Nottoway River - Lower / Lower portion 2020 L 4.54

of Nottoway River in watershed K30. Segment starts below Mill Creek near Point Beach to VA/NC state line.

Nottoway River - Lower Estuary Reservoir River Fish Consumption (Sq. Miles) (Acres) (Miles)

PCBs in Fish Tissue - Total Impaired Size by Water Type:

4.54

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K31R-01-BAC Blackwater Swamp, Warwick Swamp

Cause Location: Blackwater Swamp from its headwaters to the Blackwater River and Warwick Swamp from its headwaters to Route

627.

City / County: Dinwiddie Co. Petersburg City Prince George Co. Surry Co. Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

In the 1998 cycle, Warwick Swamp from its headwaters to the Route 627 bridge was assessed as fully supporting but threatened of the Recreation use. During the year 2002 cycle, the entire mainstems of Warwick Swamp and Blackwater Swamp were considered impaired of the Recreation use. Due to an acceptable fecal coliform exceedance rate at 5AWKS001.00, the Warwick Swamp segment was shortened to its original length in 2004. During the 2008 cycle, the impairment converted to E. coli.

The exceedance rates during the 2010 cycle were as follows:

5ABKR001.92 - 1/12

5ABKR003.68 - 4/21

5ABKR004.83 - 0/1

5ABKR005.48 - 3/10

5ABKR007.28 - 0/10

5ABKR010.39 - 2/11

5ABKR014.01 - 1/12 5ABKR016.95 - 4/12

5AWKS009.11 - 6/21 (2014 cycle)

5AWKS013.53 - 0/12

5AWKS016.48 - 2/12

5AWKS018.67 - 5/10

5AWKS019.17 - 1/10

The Blackwater River Bacterial TMDL was developed during the 2012 cycle. The report was approved by the EPA on 7/9/2010 and by the SWCB on 9/30/2010. Blackwater Swamp and Warwick Swamp will be considered Category 4A.

During the 2020 cycle the segment remained impaired for E.coli with an exceedance rate of 7/12 at station 5ABKR003.68.

Escherichia coli (E. coli) - Total Impaired Size by Water Type:						36.11
Blackwater Swamp, Warwick Swamp Recreation			Estuary (Sq. Miles)		servoir cres)	River (Miles)
VAP-K31R_WKS01A00 / Warwick Swamp / Warwick Swamp fro its headwaters to the Route 627 bridge.	m 4A	Escherichia coli (E. coli)		2008	L	13.21
VAP-K31R_BKR01A98 / Blackwater Swamp / Headwaters to mouth.	4A	Escherichia coli (E. coli)		2006	L	22.90
Assessment Unit / Water Name / Location Desc.	Cause	e ry Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size

Sources:

Municipal Point Source

Discharges

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K31R-02-BAC Second Swamp

Cause Location: Second Swamp from its headwaters to the first tributary upstream of Rt. 630

City / County: Petersburg City Prince George Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Second Swamp from its headwaters to its mouth was initially assessed as not supporting the Recreation Use support goal in 2004 based on a fecal coliform violation rate of 2/9 at the Route 618 bridge (5ASEC001.11).

Additional monitoring was conducted during the 2010 cycle. Data showed that the lower portion of Second Swamp has acceptable E. coli violation rates (1/11 at 5ASEC001.11, 1/12 at 5ASEC005.39, and 1/11 at 5ASEC006.88); therefore, the portion from the first tributary upstream of Route 630 (5ASEC006.88) downstream to its mouth was delisted (6.91 miles).

The upstream portion of Second Swamp remains listed, although only marginal violation rates were noted:

2/12 at 5ASEC014.08 0/12 at 5ASEC012.54 0/12 at 5ASEC010.97 2/12 at 5ASEC008.74

The Blackwater River and Tributaries Bacterial TMDL was developed during the 2012 cycle. The report was approved by the EPA on 7/9/2010 and by the SWCB on 9/30/2010. The TMDL addressed all of Second Swamp; therefore, the impaired portion is considered Category 4A and the previously-delisted portion is considered Category 2C.

During the 2016 cycle the segment had an E.coli exceedance rate of 3/12 at station 5ASEC012.54 and remained impaired for the recreation use.

no new data for the 2018 cycle.

		Cycle	LIMDL		
	Cause	First	Dev.	Water	
Assessment Unit / Water Name / Location Desc.	Category Cause Name	Listed	Priority	Size	
VAP-K31R_SEC01A04 / Second Swamp / Second Swamp from	n its 4A Escherichia coli (E. coli)	2010	L	9.52	
headwater to the first tributary upstream of Rt. 630					

Second Swamp

Recreation

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Reservoir (Miles)

Reservoir (Miles)

River (Miles)

9.52

Sources:

Municipal Point Source Discharges Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K31R-04-BAC **Warwick Swamp**

Cause Location: Warwick Swamp from the tributary at approximately rivermile 2.9 to its mouth at Blackwater Swamp.

City / County: Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2010 cycle, Warwick Swamp from the tributary at approximately rivermile 2.9 to its mouth was assessed as not supporting of the Recreation Use due to an E. coli exceedance rate of 3/18 at 5AWKS001.00 and 4/12 at 5AWKS002.12.

The Blackwater River and Tributaries Bacterial TMDL was developed during the 2012 cycle. The report was approved by the EPA on 7/9/2010 and by the SWCB on 9/30/2010. The TMDL only addressed the upstream impairment on Warwick Swamp, however the entire stream is located within the study area; therefore, the impaired portion will be considered nested in the Blackwater River impairment (Category 4A).

Assessment Unit / Water Name / Location Desc	Cause c. Category Cause Name	Cycle First Liste	Dev.	Water Size
VAP-K31R_WKS03A10 / Warwick Swamp / Warwick the tributary at approximately rivermile 2.9 to its mouth	•	2010	L	3.02
Warwick Swamp			eservoir (Acres)	River (Miles)
	coli) - Total Impaired Size by Water Type:	,	,	3.02

Sources:

Municipal Point Source

Non-Point Source

Discharges

Chowan River and Dismal Swamp Basins

Cause Group Code: K31R-05-BAC North Fork Blackwater Swamp

Cause Location: North Fork Blackwater Swamp from its headwater to its mouth.

City / County: Prince George Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2010 cycle, North Fork Blackwater Swamp was assessed as not supporting of the Recreation Use due to E. coli violation rates of 2/12 at 5ABNF000.65, 4/11 at 5ABNF003.73, and 2/9 at 5ABNF005.25.

The Blackwater River Bacterial TMDL was developed during the 2012 cycle. The report was approved by the EPA on 7/9/2010 and by the SWCB on 9/30/2010. North Fork Blackwater Swamp is within the study area for the TMDL and will be considered nested (Category 4A.)

Cycle TMDI

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	First Listed	Dev. Priority	Water Size	
VAP-K31R_BNF01A10 / North Fork Blackwater Swamp / Headwaters to mouth at Blackwater Swamp	· · · · · · · · · · · · · · · · · · ·				6.11
North Fork Blackwater Swamp Recreation		Estuary (Sq. Miles)		ervoir cres)	River (Miles)
Escherichia coli (E. coli)	- Total Impaired Size by Water Type:				6.11

Sources:

Municipal Point Source Discharges Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K31R-08-BAC XHO - Warwick Swamp, UT

Cause Location: Tributary from its headwater to its mouth at XES

City / County: Prince George Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2012 cycle, the tributary was impaired of the Recreation Use due to an E. coli violation rate of 3/9 at 5AXGX000.46, which is located at the Route 626 bridge. The stream drains to Warwick Swamp which was addressed in the Blackwater River and Tributaries Bacterial TMDL, approved by the EPA on 7/9/2010 and by the SWCB on 9/30/2010. The tributary will be considered nested (Category 4A) and will be addressed during implementation of the TMDL.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Cycl Firs Liste	t Dev.	Water Size		
VAP-K31R_XHO01A12 / XHO - Warwick Swamp, UT / Headwaters to mouth at XES	4A Escherichia coli (E. coli)	2012	2 L	2.42		
XHO - Warwick Swamp, UT Recreation		tuary F Miles)	Reservoir (Acres)	River (Miles)		
Escherichia coli (E. coli) - Total Impaired Size by Water Type:						

Sources:

Municipal Point Source Discharges

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K31R-09-BAC XGX - Warwick Swamp, UT

Cause Location: Tributary from its headwater to its mouth at Warwick Swamp

City / County: Prince George Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2012 cycle, the tributary was impaired of the Recreation Use due to an E. coli violation rate of 3/9 at 5AXGX000.46, which is located at the Route 626 bridge. The stream drains to Warwick Swamp which was addressed in the Blackwater River and Tributaries Bacterial TMDL, approved by the EPA on 7/9/2010 and by the SWCB on 9/30/2010. The tributary will be considered nested (Category 4A) and will be addressed during implementation of the TMDL.

Assessment Unit / Water Name / Location Desc.	Cause ent Unit / Water Name / Location Desc. Category Cause Name				
VAP-K31R_XGX01A12 / XGX - Warwick Swamp, UT / He to mouth at Warwick Swamp	eadwaters 4A Escherichia coli (E. coli)	2	2012	L	2.22
XGX - Warwick Swamp, UT		Estuary (Sq. Miles)		ervoir res)	River (Miles)
Escherichia coli (E. coli)	- Total Impaired Size by Water Type:				2.22

Sources:

Municipal Point Source Discharges

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K32R-01-BAC Blackwater River

Cause Location: Blackwater River from Warwick Swamp to the Route 617 bridge

City / County: Isle Of Wight Co. Southampton Co. Surry Co. Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

The Blackwater River was identified for listing consideration by the EPA in 1998. The segment from Warwick Swamp to Cypress Swamp was initially assessed as not supporting of the Recreation Use during the 2002 cycle based on fecal coliform exceedances at 5ABLW074.66; the bacteria TMDL was due in 2010. During the 2006 cycle, the fecal coliform exceedance rate was acceptable, however the segment was considered impaired for E. coli based on exceedances at 5ABLW074.66 and downstream station 5ABLW058.22. The FC impairment was changed to E. coli, and the original TMDL due date was maintained.

During the 2010 cycle, it was determined that the 1998 segmentation actually extended downstream to the Route 617 bridge, which is also the location of 5ABLW058.22. The error was corrected and the impairment was extended. See VAT-K32R BLW01A08.

During the 2012 cycle, the Blackwater River Bacterial TMDL was approved by the EPA on 7/9/2010 and by the SWCB on 9/30/2010. The impairment is considered Category 4A.

The following are the 2014 exceedance rates:

5/42 at 5ABLW058.22 1/11 at 5ABLW064.46 3/11 at 5ABLW069.30 3/40 at 5ABLW074.66 2/12 at 5ABLW087.70

During the 2016 cycle the segment remained impaired for Recreation use due to an E.coli exceedance rate of 6/40 at 5ABLW074.66.

During the 2018 cycle the segment remained impaired for Recreation use due to an E.coli exceedance rate of 7/42 at 5ABLW074.66.

During the 2020 cycle the segment remained impaired for Recreation use due to an E.coli exceedance rate of 9/42 at 5ABLW074.66.

Assessment Unit / Water Name / Location Desc.	Caus Catego	e ory Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K32R_BLW01B98 / Blackwater River / Start of Blackwater River at confluence of Warwick Swamp and Blackwater Swamp to Route 31	4A	Escherichia coli (E. coli)		2006	L	18.55
VAP-K32R_BLW02B98 / Blackwater River / Route 31 to Cypress Swamp	4A	Escherichia coli (E. coli)		2006	L	5.39
VAT-K32R_BLW01A08 / Blackwater River - Lower K32 / Lower portion of Blackwater R. in K32. Starts at the confluence with Cypress Swamp (upstream of Walls Bridge) downstream to above F617 crossing @ Walls Bridge (RM 58.22).	4A Rt	Escherichia coli (E. coli)		2008	L	2.32
Blackwater River			Estuary (Sq. Miles)		servoir .cres)	River (Miles)
Escherichia coli (E. coli) - Total I	mpaire	d Size by Water Type:		•	•	26.26

Chowan River and Dismal Swamp Basins

Sources:

Municipal Point Source Discharges

Non-Point Source

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K32R-01-BEN Blackwater River - Lower

Cause Location: This cause encompasses the lower portion of Blackwater River in K32. Starts at the confluence with Cypress

Swamp (upstream of Walls Bridge) downstream to above Rt 617 crossing @ Walls Bridge (RM 58.22).

City / County: Isle Of Wight Co. Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

The Aquatic Life Use is impaired based on benthic data collected at stations 5ABLW052.91 and 5ABLW055.26.

TMDL Cycle First Dev. Cause Water Listed **Priority** Category Cause Name Size Assessment Unit / Water Name / Location Desc. VAT-K32R BLW01A08 / Blackwater River - Lower K32 / Lower 5A Benthic Macroinvertebrates 2008 L 2.32 Bioassessments portion of Blackwater R. in K32. Starts at the confluence with Cypress Swamp (upstream of Walls Bridge) downstream to above Rt 617 crossing @ Walls Bridge (RM 58.22).

Blackwater River - Lower Estuary Reservoir River

Aquatic Life (Sq. Miles) (Acres) (Miles)

Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type: 2.32

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K32R-02-BAC Spring Branch

Cause Location: From the old Borden Chemical/Spurlock Adhesives discharge to the confluence with the Blackwater River

City / County: Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2012 cycle, the segment was impaired of the Recreation Use due to E. coli violations at 5ASRN000.65, which is located below Bryant Pond. The stream is within the study area for the Blackwater River Bacterial TMDL, which was approved by the EPA on 7/9/2010 and by the SWCB on 9/30/2010. Spring Branch will be addressed during implementation and is considered nested (Category 4A). The exceedance rate was 6/48 during the 2014 cycle.

During the 2018 cycle the segment remained impaired for E.coli with exceedances at all stations.

Escherichia coli (E. coli) - Total Impaired Size by Water Type:						
Spring Branch Recreation			Estuary (Sq. Miles)		servoir cres)	River (Miles)
VAP-K32R_SRN02A06 / Spring Branch / Headwaters to Spurlock Adhesives	k 4A	Escherichia coli (E. coli)		2018	L	0.11
VAP-K32R_SRN01A94 / Spring Branch / Spurlock Adhesives discharge to Blackwater River.	4A	Escherichia coli (E. coli)		2012	L	4.15
Assessment Unit / Water Name / Location Desc.	Cause	e ry Cause Name		Cycle First _isted	TMDL Dev. Priority	Water Size

Sources:

Municipal Point Source Discharges Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K32R-02-BEN Spring Branch

Cause Location: From the old Borden Chemical/Spurlock Adhesives discharge to the confluence with the Blackwater River

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 4A

Spring Branch was initially assessed as impaired of the Aquatic Life Use in the 1994 cycle due to a severely impaired benthic community.

There are six past and current biological monitoring stations on Spring Branch. 5ASRN003.82 is located upstream of all the discharges; 5ASRN003.69 is located 50 yards below the Route 460 bridge; 5ASRN001.99 and 5ASRN001.90 are located upstream and downstream of Rt. 653; 5ASRN001.24 is located 100 yards below the Sussex Service Authority's Spring Branch WWTF discharge; and 5ASRN000.65 is located downstream of Bryant's Pond, near the mouth of Spring Branch. The three downstream stations were rated impaired during the 2012 cycle.

The benthic TMDL received approval by the EPA on 5/10/2006 and from the SWCB on 9/7/2006. The results indicated that total phosphorus is the Most Probable Stressor for Spring Branch because of its relationship to low dissolved oxygen and high pH. Total phosphorus was therefore used to develop the benthic TMDL.

During the 2018 cycle the segment remained impaired for benthics.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Cyc Firs Liste	t Dev.	Water Size
VAP-K32R_SRN01A94 / Spring Branch / Spurlock Adhesives discharge to Blackwater River.	4A Benthic Macroinvertebrates Bioassessments	199	8 L	4.15
Spring Branch	Es	tuary	Reservoir	River
Aquatic Life	(Sq.	Miles)	(Acres)	(Miles)
Benthic Macroinvertebrates Bioassessments - Total	Impaired Size by Water Type:			4.15

Sources:

Industrial Point Source Municipal Point Source Non-Point Source Discharge Discharges

Chowan River and Dismal Swamp Basins

Cause Group Code: K32R-02-PH Spring Branch

Cause Location: From the old Borden Chemical/Spurlock Adhesives discharge to the confluence with the Blackwater River

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 4A

The segment was considered impaired of the Aquatic Life Use in the 2008 cycle due to high pH at station 5ASRN000.66. The benthic TMDL was completed during the 2008 cycle; it received approval by the EPA on 5/10/2006 and from the SWCB on 9/7/2006. The results indicated that total phosphorus is the Most Probable Stressor for Spring Branch because of its relationship to low dissolved oxygen and high pH. The benthic TMDL limits phosphorus input, which should reduce algal growth and lower the pH. Therefore, the segment will be considered a Category 4A water for pH.

The exceedance rates were as follows during the 2014 cycle:

12/63 at 5ASRN000.65 11/60 at 5ASRN000.66 0/64 at 5ASRN001.24 0/63 at 5ASRN001.90 0/59 at 5ASRN001.99 0/40 at 5ASRN003.69

During the 2018 cycle there was no new pH data.

		Cycle	LIVIDE		
	Cause	First	Dev.	Water	
Assessment Unit / Water Name / Location Desc.	Category Cause Name	Listed	Priority	Size	
VAP-K32R_SRN01A94 / Spring Branch / Spurlock Adhesives	4A pH	2008	L	4.15	
discharge to Blackwater River.					

Spring Branch
Aquatic Life

Estuary (Sq. Miles)
Reservoir (Miles)
(Acres)

PH - Total Impaired Size by Water Type:

4.15

Sources:

Industrial Point Source Municipal Point Source Non-Point Source Discharge Discharges

Chowan River and Dismal Swamp Basins

Cause Group Code: K32R-04-BAC Otterdam Swamp

Cause Location: Otterdam Swamp Headwaters to mouth. Nested within segment K32R-03-DO.

City / County: Prince George Co. Surry Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

The segment was initially assessed as not supporting of the Recreation Use goal during the 2002 cycle based on fecal coliform exceedances at 5AOTR001.26, 5AOTR004.31 (Rt. 607), and 5AOTR005.69 (Rt. 606). These are confined animal feeding operation (CAFO) special study stations.

E.coli was added as an impairing cause of the Recreation Use in 2006, however the original bacteria TMDL due date of 2014 was maintained. The bacteria impairment converted solely to E. coli during the 2008 cycle.

Otterdam Swamp was included in the Blackwater River Bacterial TMDL which was approved by the EPA on 7/9/2010 and by the SWCB on 9/30/2010. The impairment is considered Category 4A.

The following are the exceedance rates during the 2014 cycle:

4/21 at 5AOTR001.26

3/14 at 5AOTR004.31 (2010 cycle)

0/12 at 5AOTR005.69 (2010 cycle)

During the 2018 cycle the segment remained impaired for E.coli at station 5AOTR008.07 with an exceedance rate of 3/12. Also with 2/12 exceedance rate at station 5AOTR001.26 and 5/12 at station 5AOTR004.31.

During the 2020 cycle the segment remained impaired with 8/24 exceedance rate at station 5AOTR004.31

Cause Assessment Unit / Water Name / Location Desc. Cause Category Cause Name	F	ycle irst sted	TMDL Dev. Priority	Water Size
VAP-K32R_OTR01A98 / Otterdam Swamp / Headwaters to Averys 4A Escherichia coli (E. coli) Pond dam	2	016	L	7.44
VAP-K32R_OTR02A00 / Otterdam Swamp / Below Averys Pond to 4A Escherichia coli (E. coli) Blackwater River	2	006	L	5.86
Otterdam Swamp Recreation	Estuary (Sq. Miles)		ervoir eres)	River (Miles)
Escherichia coli (E. coli) - Total Impaired Size by Water Type:				

Sources:

Agriculture Non-Point Source Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K32R-05-BAC Coppahaunk Swamp, UT - XDT

Cause Location: Mainstem from its headwaters to mouth

City / County: Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

The Coppahaunk Swamp mainstem was initially assessed in 2002 as not supporting of the Recreation Use based on numerous fecal coliform exceedances. During the 2006 cycle, station 5AXDT000.50 had an E. coli exceedance rate of 2/2 and the UT was added into the mainstem impairment. The initial bacteria TMDL due date of 2014 was maintained.

During the 2008 cycle, additional E. coli monitoring at station 5ACPH006.00 showed an acceptable exceedance rate (1/11); therefore, the mainstem Coppahaunk Swamp was delisted for bacteria. This was a partial delist because the unnamed tributary to Coppahaunk Swamp, XDT, remains impaired.

XDT was addressed in the Blackwater River Bacterial TMDL which was approved by the EPA on 7/9/2010 and by the SWCB on 9/30/2010. Therefore, it will be considered Category 4A.

Assessment Unit / Water Nar	me / Location Desc.	Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAP-K32R_XDT01A08 / Coppah mouth at Coppahaunk Swamp	aunk Swamp, UT / Headwaters	to 4A Escherichia coli (E. coli)		2006	L	0.91
Coppahaunk Swamp, UT - XDT			Estuary (Sq. Miles)		ervoir cres)	River (Miles)
	Escherichia coli (E. coli) - Total I	mpaired Size by Water Type:				0.91

Sources:

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K32R-07-BAC Cypress Swamp Tributaries

Cause Location: All tributaries to Cypress Swamp, including Johnchecohunk Swamp and Spring Grove Swamp

City / County: Surry Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During 2006, station 5AJCH002.27 on Johnchecohunk Swamp had an E. coli exceedance rate of 2/12. In addition, the Cypress Swamp mainstem (VAP-K32R_CPP01A98) showed exceedances for bacteria. Therefore, the segment was assessed as not supporting the Recreation Use for E. coli.

The Cypress Swamp TMDL was completed and approved by the EPA on 10/14/2005. Due to the high reductions required to meet the Cypress Swamp mainstem TMDL, this segment is considered nested.

The segment remains impaired in the 2014 cycle with an exceedance rate of 2/11.

Assessment Unit / Water N	lame / Location Desc.	Cause Category Cause Name		First Listed	Dev. Priority	Water Size
VAP-K32R_CPP01B06 / Cypress Swamp Tributaries / All tributaries draining to Cypress Swamp.		4A Escherichia coli (E. coli)) 2006		L	143.62
Cypress Swamp Tributaries			Estuary (Sq. Miles)		servoir cres)	River (Miles)
Recreation	Escherichia coli (E. coli) - To	tal Impaired Size by Water Type:	(Oq. Miles)	(^	0163)	143.62
Sources:						
Agriculture	Non-Point Source	On-site Treatment Systems (Septic Systems and Similar	Wildlife Waterfo		than	

Decentralized Systems)

Chowan River and Dismal Swamp Basins

Cause Group Code: K32R-08-BAC Cypress Swamp

Cause Location: Mainstem from its headwaters to its mouth.

City / County: Surry Co.
Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Cypress Swamp from Johnchecohunk Swamp to its mouth (5.35 miles) was originally listed as impaired of the Recreation use during the 2002 cycle based on fecal coliform exceedances at the Rt. 31 bridge (5ACPP003.20). During the 2004 cycle, the impairment was extended upstream due to fecal coliform exceedances at 5A-PL-SCP1B and 5ACPP006.04 (Rt. 616).

In the 2006 cycle, E. coli was added as an impairing cause based on exceedances at 5ACPP003.20 and 5ACPP007.84 (Rt. 630). The TMDL was completed and approved by the EPA on 10/14/2005.

The impairment was converted to E. coil in the 2008 cycle based on E. coli exceedances at station 5ACPH003.20 and 5ACPH006.04.

The following were the exceedance rates during the 2010 cycle: 8/34 at 5ACPP003.20 2/12 at 5ACPP007.86

During the 2018 cycle there was no new data.

During the 2020 cycle the segment was impaired for E.coli with an exceedance rate of 2/12 at station 5ACPP003.20.

Cycle TMDI

Assessment Unit / W	/ater Name / Location Desc.	Caus Catego	e ory Cause Name		First Listed	Dev. Priority	Water Size
VAP-K32R_CPP01A98 / at Blackwater River.	Cypress Swamp / Headwaters to mou	th 4A	Escherichia coli (E. coli)		2006	L	17.06
Cypress Swamp Recreation				Estuary (Sq. Miles)		servoir .cres)	River (Miles)
	Escherichia coli (E. coli) - Tota	I Impaire	d Size by Water Type:				17.06
Sources:							
Agriculture	Non-Point Source	(Septi	e Treatment Systems c Systems and Similar atralized Systems)	Wildlife Waterfo		than	

Chowan River and Dismal Swamp Basins

Cause Group Code: K32R-11-BAC **XDR - UT to Otterdam Swamp**

Cause Location: Headwaters to mouth

City / County: Surry Co. Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2006 cycle, XDR (UT to Otterdam Swamp) was considered impaired of the Recreation Use due to a fecal coliform violation rate of 9/16 at 5AXDR00.38. Additional monitoring during the 2010 cycle confirmed an E. coli impairment with a violation rate of 5/14.

The tributary is within the study area for the Otterdam Swamp bacterial impairment, which was addressed in the Blackwater River Bacterial TMDL. The TMDL was approved by the EPA on 7/9/2010 and by the SWCB on 9/30/2010. The impairment will be addressed during implementation and is therefore considered nested (Category 4A).

XDR - UT to Otterdam Swamp	Estuary F	Reservoir	River	
VAP-K32R_XDR01A06 / UT to Otterdam Swamp / Headwater mouth at Otterdam Swamp	s to 4A Escherichia coli (E. coli)	2010) L	2.61
Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Cycle Firs Liste		Water Size

(Sq. Miles) (Acres) Recreation

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

(Miles)

2.61

Sources:

Municipal Point Source Discharges

Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K32R-13-HG Blackwater River Basin

Cause Location: Blackwater River and tributaries from its headwaters to the VA-State Line

City / County: Dinwiddie Co. Isle Of Wight Co. Petersburg City Prince George Co. Southampton Co.

Suffolk City Surry Co. Sussex Co.

Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

During the 2006 cycle, the Blackwater River from Route 31 near Dendron downstream to the Virginia-North Carolina state line was assessed as impaired of the Fish Consumption Use due to a VDH fish consumption advisory for mercury.

During the 2008 cycle, the advisory was expanded on 8/31/2007 to include the Blackwater River to its headwaters, including all of its tributaries. The advisory currently recommends consuming no more than two meals/month of Blue Catfish, largemouth bass, sunfish species, bowfin, chain pickerel, white catfish, redhorse sucker and longnose gar.

The advisory is based on the results of DEQ's fish tissue monitoring program, which show mercury exceedances at multiple stations throughout the watershed, including 5ABKR003.68, 5ABKR002.33, 5AWKS013.53, 5ASEC005.39, 5ABLW074.66, 5ACPP004.04, 5ACPP007.86, 5AJCH000.73.

	Cause		Cycle First	TMDL Dev.	Water
Assessment Unit / Water Name / Location Desc.	Catego	ry Cause Name	Listed	Priority	Size
VAP-K31R_BKR01A98 / Blackwater Swamp / Headwaters to mouth.	5A	Mercury in Fish Tissue	2008	L	22.90
VAP-K31R_BNF01A10 / North Fork Blackwater Swamp / Headwaters to mouth at Blackwater Swamp	5A	Mercury in Fish Tissue	2008	L	6.11
VAP-K31R_CAT01A10 / Cattail Creek / Headwaters to mouth at Blackwater Swamp	5A	Mercury in Fish Tissue	2008	L	3.43
VAP-K31R_SEC01A04 / Second Swamp / Second Swamp from in headwater to the first tributary upstream of Rt. 630	ts 5A	Mercury in Fish Tissue	2008	L	9.52
VAP-K31R_SEC01B10 / Second Swamp / First tributary upstream of Rt. 630 to mouth	n 5A	Mercury in Fish Tissue	2008	L	6.91
VAP-K31R_WKS01A00 / Warwick Swamp / Warwick Swamp from its headwaters to the Route 627 bridge.	m 5A	Mercury in Fish Tissue	2008	L	13.21
VAP-K31R_WKS02A04 / Warwick Swamp / Warwick Swamp from the Route 627 bridge to the tributary at approximately rivermile 2.9	m 5A	Mercury in Fish Tissue	2008	L	6.23
VAP-K31R_WKS03A10 / Warwick Swamp / Warwick Swamp from the tributary at approximately rivermile 2.9 to its mouth	m 5A	Mercury in Fish Tissue	2008	L	3.02
VAP-K31R_XAT01A10 $/$ Blackwater Swamp, UT $/$ Headwaters to mouth at Blackwater Swamp	5A	Mercury in Fish Tissue	2008	L	1.46
VAP-K31R_XES01A08 / Warwick Swamp, UT / Headwater to mouth at Warwick Swamp	5A	Mercury in Fish Tissue	2008	L	3.43
VAP-K31R_XFN01A08 / North Fork Blackwater Swamp, UT / Headwaters to mouth at North Fork Blackwater Swamp	5A	Mercury in Fish Tissue	2008	L	2.82
VAP-K31R_XFX01A10 / Warwick Swamp, UT / Headwaters to mouth at Warwick Swamp	5A	Mercury in Fish Tissue	2008	L	2.95
VAP-K31R_XGE01A10 / Blackwater Swamp, UT / Headwaters to mouth at Blackwater Swamp	5A	Mercury in Fish Tissue	2008	L	1.46
$\label{lem:condition} VAP\text{-}K31R_XGX01A12\ /\ XGX\ -\ Warwick\ Swamp,\ UT\ /\ Headwate to\ mouth\ at\ Warwick\ Swamp$	rs 5A	Mercury in Fish Tissue	2008	L	2.22
VAP-K31R_XHO01A12 / XHO - Warwick Swamp, UT /	5A	Mercury in Fish Tissue	2008	L	2.42
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5A	Mercury in Fish Tissue	2008	L	2.50
5A	Mercury in Fish Tissue	2008	L	4.39
5A	Mercury in Fish Tissue	2008	L	40.84
5A	Mercury in Fish Tissue	2008	L	94.09
5A	Mercury in Fish Tissue	2008	L	59.14
5A	Mercury in Fish Tissue	2008	L	18.55
5A	Mercury in Fish Tissue	2006	L	5.39
5A	Mercury in Fish Tissue	2008	L	11.98
5A	Mercury in Fish Tissue	2008	L	17.06
5A	Mercury in Fish Tissue	2008	L	143.62
5A	Mercury in Fish Tissue	2008	L	7.44
5A	Mercury in Fish Tissue	2008	L	5.86
5A	Mercury in Fish Tissue	2008	L	7.31
5A	Mercury in Fish Tissue	2008	L	4.15
5A	Mercury in Fish Tissue	2008	L	0.11
5A	Mercury in Fish Tissue	2008	L	0.72
5A	Mercury in Fish Tissue	2008	L	1.07
5A	Mercury in Fish Tissue	2008	L	2.61
5A	Mercury in Fish Tissue	2008	L	1.12
5A	Mercury in Fish Tissue	2008	L	0.91
5A	Mercury in Fish Tissue	2008	L	3.13
5A	Mercury in Fish Tissue	2008	L	1.20
5A	Mercury in Fish Tissue	2008	L	2.97
	5A 5A 5A 5A 5A 5A 5A 5A 5A 5A 5A 5A 5A 5	Mercury in Fish Tissue Mercury in Fish Tissue	5A Mercury in Fish Tissue 2008 5A Me	5A Mercury in Fish Tissue 2008 L 5A Mercury in Fish Tissue 2006 L 5A Mercury in Fish Tissue 2008 L <td< td=""></td<>

Chowan River and Dismal Swamp Basins					
VAP-K32R_ZZZ01A14 / Unsegmented Rivers in K32R / Unsegmented portion of watershed CU55.	5A	Mercury in Fish Tissue	2008	L	30.88
VAP-K32R_ZZZ01B14 / Unsegmented Rivers in K32R / Unsegmented portion of watershed CU56.	5A	Mercury in Fish Tissue	2008	L	40.81
VAP-K32R_ZZZ01C14 / Unsegmented Rivers in K32R / Unsegmented portion of watershed CU57	5A	Mercury in Fish Tissue	2008	L	111.12
VAT-K32R_BLW01A08 / Blackwater River - Lower K32 / Lower portion of Blackwater R. in K32. Starts at the confluence with Cypress Swamp (upstream of Walls Bridge) downstream to above Rt 617 crossing @ Walls Bridge (RM 58.22).	5A	Mercury in Fish Tissue	2006	L	2.32
VAT-K33R_ANT01A06 / Antioch Swamp - Middle / From confluence with Burnt Mills Swamp downstream to confluence with northern UT (RM 1.30).	5A	Mercury in Fish Tissue	2010	L	1.45
VAT-K33R_BLW01A00 / Blackwater River - Upper / Upper portion of Blackwater R. in K33. Starts at the Rt 617 crossing (Walls Bridge, RM 58.22) downstream to above Rt 460 crossing @ Zuni (RM 40.23).	5A	Mercury in Fish Tissue	2006	L	19.10
VAT-K33R_BLW02A04 / Blackwater River - Middle / Middle portion of Blackwater River within watershed, from Rt 460 bridge crossing, RM 40.22 to downstream approx. halfway between Station 5ABLW040.22 and Station 5ABLW038.69.	5A	Mercury in Fish Tissue	2004	L	1.04
VAT-K33R_BLW03A08 / Blackwater River - Lower / Lower portion of Blackwater River within watershed, from RM 39.34 downstream of confluence with Antioch Swamp (RM 35.22)].	5A	Mercury in Fish Tissue	2004	L	4.18
VAT-K33R_BLW04A08 / Blackwater River / From connection of Antioch Swamp to the Watershed line of K33.	5A	Mercury in Fish Tissue	2008	L	1.81
VAT-K33R_BMS01A12 / Burnt Mills Swamp / At confluence of Antioch Swamp to Route 258.	5A	Mercury in Fish Tissue	2008	L	5.16
VAT-K33R_ZZZ01A00 / Unsegmented rivers in K33R, Villines Swamp / Evaluated non-segmented rivers/swamps in K33.	5A	Mercury in Fish Tissue	2008	L	199.37
VAT-K34R_GHB01A18 / Golden Hill Branch / Tributary to Mill Swamp; North of Elberon	5A	Mercury in Fish Tissue	2010	L	3.47
VAT-K34R_MSW01A00 / Mill Swamp / Located northwest of Raynor, upstream tributary to Rattlesnake Swamp. Segment begins at confluence of Moores Swamp with Mill Swamp (mile 16.78) downstream to confluence with Rattlesnake Swamp (mile 0.0).	5A	Mercury in Fish Tissue	2010	L	8.44
VAT-K34R_MSW02A18 / Mill Swamp- Upper / Upstream portion of Swamp, Located North of Route 617 and South of Colonial Trail	5A	Mercury in Fish Tissue	2010	L	5.14
VAT-K34R_RKN01A02 / Rattlesnake Swamp K34 / Located northwest of Raynor. Rattlesnake Swamp Segment from confluence of Pouches Swamp downstream to watershed boundary K33/K34.	5A	Mercury in Fish Tissue	2010	L	6.42
VAT-K34R_ZZZ01A00 / Unsegmented rivers in K34R, Rattlesnake Swamp / Evaluated non-segmented rivers in K34.	5A	Mercury in Fish Tissue	2010	L	153.32
VAT-K35R_BNT01A04 / Brantley Swamp - Lower / Located northeast of Pulleys Crossroads. Segment from confluence with Lightwood Swamp downstream to confluence with Seacock Swamp.	5A	Mercury in Fish Tissue	2010	L	3.65
VAT-K35R_RHS01A08 / Round Hill Swamp / Confluence of Seacock Swamp between State Route 614 and State Route 623	5A	Mercury in Fish Tissue	2010	L	0.64
VAT-K35R_RHS02A20 / Roundhill Swamp / Round Hill Swamp east of Appleton Road, north of Quaker Road, to the west of Seacock Swamp.	5A	Mercury in Fish Tissue	2010	L	3.88

Chowan River and Dismal Swamp Basins					
VAT-K35R_RHS03A20 / Roundhill Swamp / Round Hill Swamp from the confluence of Horsepen Branch and Indigo Branch, north of Round Hill Road, west of Appleton Road.	5A	Mercury in Fish Tissue	2010	L	4.02
VAT-K35R_SCK01A00 / Seacock Swamp - Upper / Located west of Rt 460, south of Sussex - Southampton Co. line. Upper portion of Seacock Swamp, from Drumwright Pond downstream to confluence with unnamed tributary, approx. 0.1 mi downstream of Rt 628 crossing.	5A	Mercury in Fish Tissue	2010	L	0.84
VAT-K35R_SCK02A08 / Seacock Swamp - Lower / Located west of Rt 460 south of Ivor. Lower portion of Seacock Swamp, from confluence with Brantley Swamp (RM 8.73) downstream below State Hwy 614.	5A	Mercury in Fish Tissue	2010	L	2.50
VAT-K35R_SCK03A08 / Seacock Swamp - Lower / Lower portion of Seacock Swamp south of Doles Crossroads, west of State Hwy 600.	5A	Mercury in Fish Tissue	2010	L	2.59
VAT-K35R_SCK03B18 / Seacock Swamp / Approx. 1 mi north of Seacock Swamp where it crosses Route 635 to confluences with the Blackwater River	5A	Mercury in Fish Tissue	2010	L	3.23
VAT-K35R_SCK04A10 / Seacock Swamp / From State Route 618 south to confluence with Reddy Hole Branch	5A	Mercury in Fish Tissue	2010	L	0.81
VAT-K35R_XDY01A04 / UT Seacock Swamp- Upper / UT to Seacock Swamp, PRO CAFO special study. Headwaters to confluence with Seacock Swamp mainstem.	5A	Mercury in Fish Tissue	2010	L	1.02
VAT-K35R_XDZ01A04 / UT Airfield Pond - Upper / UT to Airfield Pond, PRO CAFO special study. Headwaters to confluence with UT VAT-K35R_XDZ02A04.	5A	Mercury in Fish Tissue	2010	L	0.68
VAT-K35R_XDZ02A04 / UT Airfield Pond - Lower / UT start at confluence with segment VAT-K35R_XDZ01A04 halfway between State Hwy 622 and 729 downstream to Airfield Pond.	5A	Mercury in Fish Tissue	2010	L	0.71
VAT-K35R_XED01A18 / UT to Seacock Swamp-Lower / Tributary of Seacock Swamp that runs East / West from South of Corinth at Rt. 626 to Rt 635 north of Unity in Southampton County where it merges with the mainstem of Seacock Swamp.	5A	Mercury in Fish Tissue	2010	L	3.75
VAT-K35R_ZZZ01A00 / Unsegmented rivers in Seacock Swamp. / Area of unsegmented rivers that extend west from Airfield Pond, North to Rt. 460 in Wakefield, East to Guildfield Corner and South to Corinth.	5A	Mercury in Fish Tissue	2010	L	199.07
VAT-K35R_ZZZ02A18 / Unsegmented Seacock Swamp - No Station / Unsegmented portions K35R Seacock Swamp	5A	Mercury in Fish Tissue	2010	L	13.29
VAT-K36R_BLC01A06 / Black Creek / Located NW of Burdette. From Wades Pond downstream to mouth. Tributary to Blackwater R. with confluence at RM 22.0.	5A	Mercury in Fish Tissue	2008	L	4.95
VAT-K36R_BLC02A10 / Black Creek - Upper / Segment parallel with State Route 503. Southeast of Whitefields Millpond and Johnson Millpond.	5A	Mercury in Fish Tissue	2008	L	3.29
VAT-K36R_BLW01A00 / Blackwater River - Uppermost (PWS) / From start of watershed at RM 35.21 (at the confluence with Seacock Swamp) downstream to approximately 0.1 mi south of Rt. 603.	5A	Mercury in Fish Tissue	2004	L	4.28
VAT-K36R_BLW01B08 / Blackwater River - Upper / Between State Hwy 603 at the confluence with Horse Swamp to approximately 0.5 mi north of State Hwy 630.	5A	Mercury in Fish Tissue	2004	L	6.47
VAT-K36R_BLW02A08 / Blackwater River - Middle / Segment	5A	Mercury in Fish Tissue	2004	L	3.85
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Chowan River and Dismal Swamp Basins						
includes water from east of Edgehill to west of the Franklin Municipal John Beverly Rose Airport.						
VAT-K36R_BLW02B08 / Blackwater River - Upper / Segment begins north of Maynards Crossroads and State Hwy 630 and ends at Joyners Bridge.	5A	Mercury in Fish Tissue		2004	L	2.47
VAT-K36R_BLW02C10 / Blackwater River - Upper / Segment begins at State Route 611 and ends near Edgehill.	5A	Mercury in Fish Tissue		2004	L	3.00
VAT-K36R_BLW03A08 / Blackwater River - Middle / Segment begins west of the Franklin Municipal John Beverly Rose Airport and ends at the Blackwater Landing in Franklin.	5A	Mercury in Fish Tissue		2004	L	2.23
VAT-K36R_BLW04A08 / Blackwater River - Lower Middle / From Blackwater Landing in Franklin the southern end of the industrial waste ponds in Isle of Wight.	5A	Mercury in Fish Tissue		2004	L	2.83
VAT-K36R_BLW04B12 / Blackwater River - Lower Middle / From Industrial Waste Ponds near Isle of Wight and Suffolk line to US-58.	5A	Mercury in Fish Tissue		2004	L	0.69
VAT-K36R_BLW04C12 / Blackwater River - Lower Middle / South of the Isle of Wight / Suffolk line beginning at Rt 58 downstream to Cox Landing	5A	Mercury in Fish Tissue		2012	L	4.06
VAT-K36R_BLW05A08 / Blackwater River - Lower / From Cox Landing downstream to downstream to VA/NC state line	5A	Mercury in Fish Tissue		2004	L	5.10
VAT-K36R_BLW06A20 / Blackwater River - Lower Middle / Blackwater River south of Route 58 and north of South Quay Road.	5A	Mercury in Fish Tissue		2012	L	0.68
VAT-K36R_CRW01A18 / Corrowaugh Swamp / Trib to Blackwater North of Route 619 upstream near Dardens Pond and Route 611	5A	Mercury in Fish Tissue		2008	L	5.87
VAT-K36R_CYS01A12 / Cypress Swamp / Swamp off of Blackwater River. From Town of Sedley downstream to Route 611.	5A	Mercury in Fish Tissue		2008	L	5.16
VAT-K36R_DKS01A10 / Ducks Swamp / From confluence with Jenkins Swamp upstream to confluence with Corrowaugh Swamp - north of Walters and Aqueduct.	5A	Mercury in Fish Tissue		2008	L	2.61
VAT-K36R_WAC01A08 / Washole Creek / Segment at the confluence of Blackwater. East of Franklin Sewage Disposal. South of US Hwy 58.	5A	Mercury in Fish Tissue		2008	L	0.55
VAT-K36R_XGI01A08 / Unsegmented Tributary to Blackwater / Unsegmented river from Blackwater south of Franklin and north of State Hwy 58	5A	Mercury in Fish Tissue		2008	L	2.75
VAT-K36R_ZZZ01A00 / Unsegmented rivers in K36R (not PWS area) / Evaluated non-segmented rivers in K36 (excluding Corrowaugh Swamp), located downstream of Norfolk raw water intake located southeast of Burdette (on Blackwater R).	5A	Mercury in Fish Tissue		2008	L	308.86
VAT-K36R_ZZZ01B00 / Unsegmented rivers in K36R (PWS area) / The evaluated tributaries to Blackwater River (including Corrowaugh Swamp), located within 5 mi upstream from Norfolk raw water intake located southeast of Burdette (on Blackwater R). From end of K36 (RM 35.0) downstream to RM 27.0.	5A	Mercury in Fish Tissue		2008	L	68.05
VAT-K36R_ZZZ01C18 / UT to Blackwater / Trib to Blackwater River in Franklin South of 258 to headwaters near Clay St	5A	Mercury in Fish Tissue		2008	L	3.20
Blackwater River Basin Fish Consumption Mercury in Fish Tissue - Total Imp	Estuary (Sq. Miles)		ervoir res)	River (Miles)		

Chowan River and Dismal Swamp Basins

Sources:

Atmospheric Deposition - Toxics

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K32R-15-BAC Spring Branch, UT (XAW)

Cause Location: The unnamed tributary from its headwaters to its mouth at Spring Branch.

City / County: Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2010 cycle, the UT was assessed as not supporting of the Recreation Use due to E. coli exceedances at the Route 460 bridge (5AXAW000.19). The stream is located within the study area for the Blackwater River Bacterial TMDL, which was approved by the EPA on 7/9/2010 and by the SWCB on 9/30/2010. The impairment will be addressed during implementation; therefore, it is considered nested (Category 4A.)

The exceedance rate was 20/53 during the 2014 cycle.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Fir List	st Dev.	Water Size
VAP-K32R_XAW01A08 / Spring Branch, UT / Headwaters to mouth at Spring Branch.	4A Escherichia coli (E. coli)	201	0 L	1.07
Spring Branch, UT (XAW) Recreation		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Escherichia coli (E. coli) - Tota	al Impaired Size by Water Type:			1.07

Sources:

Municipal Point Source Discharges Non-Point Source

Chowan River and Dismal Swamp Basins

Cause Group Code: K32R-16-BAC Spring Branch, UT (XAL)

Cause Location: The unnamed tributary from its headwaters to its mouth at Spring Branch.

City / County: Prince George Co. Surry Co. Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

During the 2012 cycle, the tributary was impaired of the Recreation Use due to E. coli exceedances at 5AXAL000.02. The stream is located within the study area for the Blackwater River Bacterial TMDL, which was approved by the EPA on 7/9/2010 and by the SWCB on 9/30/2010. The impairment will be addressed during implementation; therefore, it is considered nested (Category 4A.) The exceedance rate was 7/24 during the 2014 cycle.

During the 2018 cycle the segment remained impaired with exceedance rates of 16/22 at 5AXAW000.19.

A	Mater News /	Leasting David	Catago		First	Dev. Priority	Water	
Assessment Unit /	water name /	Location Desc.	Catego	ry Cause Name	Listeu	FIIOTILY	Size	
VAP-K32R_XAL01A08 at Spring Branch.	/ Spring Branch	, UT / Headwaters to mou	uth 4A	Escherichia coli (E. coli)	2012	L	0.72	

Spring Branch, UT (XAL)

Recreation

Reservoir River (Sq. Miles)

(Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 0.72

Sources:

Municipal Point Source Non-Point Source

Discharges

Chowan River and Dismal Swamp Basins

Cause Group Code: K32R-18-BEN Blackwater River, UT

Cause Location: Unnamed tributary XFM from its headwaters to its mouth at Blackwater River

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

During the 2008 cycle, the tributary was assessed as not supporting the Aquatic Life Use due to impairment of the benthic community at station 5AXFM000.88, which is located at the Route 613 bridge.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Cycle TMDL First Dev. Listed Priority	Water Size
VAP-K32R_XFM01A08 / Blackwater River, UT / Headwaters to mouth at Blackwater River	5A Benthic Macroinvertebrates Bioassessments	2008 L	3.13
Blackwater River, UT Aquatic Life	Estuary (Sq. Miles	Reservoir (Acres)	River (Miles)
Benthic Macroinvertebrates Bioassessments - Total	Impaired Size by Water Type:		3.13

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K33R-02-BAC Blackwater River - Middle

Cause Location: This cause encompasses the middle portion of Blackwater River from Rt 460 bridge crossing, RM 40.22 to

downstream approx. halfway between Station 5ABLW040.22 and Station 5ABLW038.69.

City / County: Isle Of Wight Co. Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

Recreational Use is not supported with 5 viol / 34 obs at station 5ABLW040.22 (K33R-02-BAC)

TMDL Cycle First Dev. Cause Water Listed **Priority** Size Category Cause Name Assessment Unit / Water Name / Location Desc. VAT-K33R BLW02A04 / Blackwater River - Middle / Middle Escherichia coli (E. coli) 2012 Н 1.04

portion of Blackwater River within watershed, from Rt 460 bridge crossing, RM 40.22 to downstream approx. halfway between Station 5ABLW040.22 and Station 5ABLW038.69.

Blackwater River - Middle

Reservoir River

Recreation

Reservoir (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Escriciona don (E. con) Total impando dize by Water Typ

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K33R-02-BEN Blackwater River - Upper

Cause Location: This cause encompasses the upper portion of Blackwater R. in K33. Starts at the Rt 617 crossing (Walls Bridge,

RM 58.22) downstream to above Rt 460 crossing @ Zuni (RM 40.23).

City / County: Isle Of Wight Co. Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

Benthic impairment is retained from 2008 Assessment. No new benthic data within the assessment window. Previous impairment is from benthic data collected at stations 5ABLW052.91 and 5ABLW055.26. Station Metrics in 2002 for station 52.91 and 2001 for 55.26 in the Spring and Fall were classified as moderately impaired with low DO and swamp conditions.

Assessment Unit / Water Name / Location Desc.	Cause Catego	e ory Cause Name	Cycle First Listed	TMDL Dev. Priority	Water Size
VAT-K33R_BLW01A00 / Blackwater River - Upper / Upper portion of Blackwater R. in K33. Starts at the Rt 617 crossing (Walls Bridg RM 58.22) downstream to above Rt 460 crossing @ Zuni (RM 40.2)	e,	Benthic Macroinvertebrates Bioassessments	2008	L	19.10

Blackwater River - Upper Estuary Reservoir River Aquatic Life (Sq. Miles) (Acres) (Miles)

Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:

19.10

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K33R-03-BEN Blackwater River - Lower and Burnt Mills Swamp

Cause Location: This cause encompasses the lower portion of the Blackwater River from RM 39.34 to the confluence with Antioch

Swamp as well as the entirety of Burnt Mills Swamp

City / County: Isle Of Wight Co. Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

Benthic impairment identified at DEQ (ProbMon) station 5ABLW038.69. Station 5ABLW038.69 Benthic IM [MI: S&F '05] and

5ABMS000.80 [VI: S&F 10].

Assessment Unit / Water Name / Location Desc.	Cause Catego	e ry Cause Name	F	ycle First isted	TMDL Dev. Priority	Water Size
VAT-K33R_BLW03A08 / Blackwater River - Lower / Lower portion of Blackwater River within watershed, from RM 39.34 downstream of confluence with Antioch Swamp (RM 35.22)].		Benthic Macroinvertebrates Bioassessments	2	2008	L	4.18
VAT-K33R_BMS01A12 / Burnt Mills Swamp / At confluence of Antioch Swamp to Route 258.	5A	Benthic Macroinvertebrates Bioassessments	2	2012	L	5.16
Blackwater River - Lower and Burnt Mills Swamp Aquatic Life			tuary Miles)		ervoir cres)	River (Miles)
Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:						

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K34R-01-BAC Mill Swamp

Cause Location: Located northwest of Raynor, upstream tributary to Rattlesnake Swamp. Segment begins at confluence of Moores

Swamp with Mill Swamp (mile 16.78) downstream to confluence with Rattlesnake Swamp (mile 0.0).

City / County: Isle Of Wight Co. Surry Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Recreational Use is impaired based on the E.coli data with 8 viol / 24 obs at DEQ (AQM) station @ 5AMSW006.77.

A Bacterial TMDL for the Chowan Study Area was developed and EPA approved on 10/14/2005 (VAT-K34R-01).

Cycle **TMDL** First Dev. Water Cause **Priority** Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Size VAT-K34R MSW01A00 / Mill Swamp / Located northwest of Escherichia coli (E. coli) 2010 8.44 Raynor, upstream tributary to Rattlesnake Swamp. Segment begins at confluence of Moores Swamp with Mill Swamp (mile 16.78) downstream to confluence with Rattlesnake Swamp (mile 0.0).

Mill Swamp

Recreation

Estuary (Sq. Miles) Reservoir (Miles)

(Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 8.44

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K34R-02-BAC Rattlesnake Swamp

Cause Location: This cause encompasses Rattlesnake Swamp Segment from confluence of Pouches Swamp downstream to

watershed boundary K33/K34.

City / County: Isle Of Wight Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Recreational Use is impaired based on E.coli data 11 viol / 35 obs.

A Bacterial TMDL for the Chowan Study Area was developed and EPA approved on 10/14/2005 (VAT-K34R-01). This TMDL includes Rattlesnake (Creek) Swamp, Mill Swamp, Cypress Swamp, Nottoway River, Little Nottoway River, Big Hounds Creek, Beaverpond Creek, Sappony Creek, and Raccoon Creek.

			Cycle	TMDL	
	Cause	•	First	Dev.	Water
Assessment Unit / Water Name / Location Desc.	Catego	ry Cause Name	Listed	Priority	Size
VAT-K34R_RKN01A02 / Rattlesnake Swamp K34 / Located	4A	Escherichia coli (E. coli)	2010	L	6.42
northwest of Raynor. Rattlesnake Swamp Segment from confluence	ce				
of Pouches Swamp downstream to watershed boundary K33/K34.					

Rattlesnake Swamp
Recreation

Estuary Reservoir River (Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

6.42

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K35L-01-DO Airfield Pond

Cause Location: This cause encompasses the Pond north of Lightwood Swamp, off of State Route 628.

City / County: Sussex Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

Aquatic Life Use is impaired for dissolved oxygen based on the Class III DO water quality criteria. Data from station

5ALTD005.10 has 15 viol / 42 obs for Dissolved Oxygen.

Cycle **TMDL** First Dev. Cause Water Listed Priority Size Category Cause Name Assessment Unit / Water Name / Location Desc. 120.07 VAT-K35L_LTD01A02 / Airfield Pond / Pond north of Lightwood 5C Dissolved Oxygen 2008

Swamp; off of State Route 628

Airfield Pond Estuary Reservoir River
Aquatic Life (Sq. Miles) (Acres) (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type: 120.07

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed **Natural Sources**

Chowan River and Dismal Swamp Basins

Cause Group Code: K35L-01-HG Airfield Pond

Cause Location: This cause encompasses all of Airfield Pond north of Lightwood Swamp, off of State Route 628.

City / County: Sussex Co.
Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

The Fish Consumption Use is impaired based on Fish Tissue data from 2006 at Station 5ALTD005.10. Fish Tissue data Impaired for Hg for fish species Brown Bullhead Catfish, Largemouth Bass, Chain Pickerel, Bowfin & Bluegill Sunfish. The VDH Fish Advisory is for all of Blackwater and its tributaries as stated on 10/29/03, modified 7/27/05 and again on 8/31/07.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		First Listed	Dev. Priority	Water Size		
VAT-K35L_LTD01A02 / Airfield Pond / Pond north of Lightv Swamp; off of State Route 628	vood 5A Mercury in Fish Tissue	:	2010	L	120.07		
Airfield Pond		Estuary	Reservoir		River		
Fish Consumption		(Sq. Miles)	(Ad	cres)	(Miles)		
Mercury in Fish Tissue -	Mercury in Fish Tissue - Total Impaired Size by Water Type:			120.07			

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K35R-02-BAC Seacock Swamp - Lower

Cause Location: This cause encompasses the lower portion of Seacock swamp south of Doles Crossroads, west of State Hwy 600.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Fecal Coliform / 5A

Recreational Use impairment is retained. Need new E.coli data.

2006 01557 / 2008 K35R-02-BAC

TMDL Cycle First Dev. Cause Water Listed Priority Size Category Cause Name Assessment Unit / Water Name / Location Desc. 2004 VAT-K35R_SCK03A08 / Seacock Swamp - Lower / Lower portion 5A Fecal Coliform L 2.59

of Seacock Swamp south of Doles Crossroads, west of State Hwy

600.

Seacock Swamp - Lower **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) Recreation

Fecal Coliform - Total Impaired Size by Water Type:

2.59

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K35R-02-BEN Seacock Swamp - Lower

Cause Location: This cause encompasses the lower portion of Seacock swamp

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

The Aquatic Life Use is impaired based on benthic assessment at station 5ASCK003.84 Benthic IM [MI:S-'04]. There is

insufficient data to assess DO or pH.

	Cause		Cycle First	TMDL Dev.	Water	
_	Category Cause Name		Listed	Priority	Size	
VAT-K35R_SCK03A08 / Seacock Swamp - Lower / Lower portion of Seacock Swamp south of Doles Crossroads, west of State Hwy	5A	Benthic Macroinvertebrates Bioassessments	2008	L	2.59	
600						

Seacock Swamp - Lower

Aquatic Life

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:

2.59

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K35R-03-BAC **UT Seacock Swamp**

Cause Location: This cause encompasses the UT to Seacock Swamp, PRO CAFO special study. Headwaters to confluence with

Seacock Swamp mainstem.

City / County: Surry Co.

Use(s): Recreation

Cause(s) / VA Category: Fecal Coliform / 5A

Recreational Use is not supported based on data over 5 years old (2004 IR FC data: 6 viol / 7 obs.) at 5AXDY000.96. The

Cause

impaired status was retained from previous Fecal Coliform data.

Confined animal operations are present in the watershed.

Assessment Unit / Water Name / Location Desc.

VAT-K35R XDY01A04 / UT Seacock Swamp- Upper / UT to

Seacock Swamp, PRO CAFO special study. Headwaters to confluence with Seacock Swamp mainstem.

UT Seacock Swamp Estuary Reservoir River (Sq. Miles) (Miles) (Acres) Recreation

Fecal Coliform - Total Impaired Size by Water Type:

Category Cause Name

Fecal Coliform

Cycle

First

Listed

2004

TMDL

Dev.

Priority

Water

Size

1.02

1.02

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K35R-05-BAC UT Airfield Pond - Upper

Cause Location: This cause encompasses UT to Airfield Pond, PRO CAFO special study. Headwaters to confluence with UT VAT-

K35R_XDZ02A04.

City / County: Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

Recreation Use impairment is based on 2015 data from Station 5AXDZ001.73 with 2 viol / 6 obs for Ecoli. Previously for E.coli in 2007 was 4 viol/ 6 obs. Listing based on Fecal Coliform data impairment (TMDL ID: VAT-K41R-05) based with 13 violates /

16 observations.

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

AT-K35R XDZ01A04 / UT Airfield Pond - Upper / UT to Airfield 5A Escherichia coli (E. coli) 2004 L 0.68

VAT-K35R_XDZ01A04 / UT Airfield Pond - Upper / UT to Airfield Pond, PRO CAFO special study. Headwaters to confluence with UT

Pond, PRO CAFO special study. Headwaters to confluence with UT VAT-K35R_XDZ02A04.

UT Airfield Pond - Upper
Recreation

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

0.68

Sources:

Animal Feeding Operations Source Unknown

(NPS)

Chowan River and Dismal Swamp Basins

Cause Group Code: K35R-06-BAC Seacock Swamp - Upper and Lower

Cause Location: This cause encompasses the upper portion of Seacock Swamp between Drumwright Pond and approximately 0.2

mi east of Rt. 628 and lower Seacock Swamp between the confluence of Brantley Swamp and the confluence with

Round Hill Swamp.

City / County: Southampton Co. Surry Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A Fecal Coliform / 5A

The Recreation Use is impaired based on E.coli data at Station 5ASCK006.96 with 10 viol / 30 obs.

Cycle **TMDL** Cause First Dev. Water Category Cause Name Listed **Priority** Size Assessment Unit / Water Name / Location Desc. Escherichia coli (E. coli) 2012 2.50 VAT-K35R SCK02A08 / Seacock Swamp - Lower / Located west 5A of Rt 460 south of Ivor. Lower portion of Seacock Swamp, from confluence with Brantley Swamp (RM 8.73) downstream below State Hwy 614.

Seacock Swamp - Upper and Lower

Recreation

Estuary

Reservoir

River

(Sq. Miles)

(Acres)

(Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Fecal Coliform

2.50

0.84

0.84

2006

L

Cycle TMDL
Cause First Dev. W

Assessment Unit / Water Name / Location Desc.

Cause First Dev. Water Category Cause Name Listed Priority Size

VAT-K35R_SCK01A00 / Seacock Swamp - Upper / Located west of Rt 460, south of Sussex - Southampton Co. line. Upper portion of Seacock Swamp, from Drumwright Pond downstream to confluence with unnamed tributary, approx. 0.1 mi downstream of Rt 628 crossing.

Seacock Swamp - Upper and Lower

Recreation

Reservoir River
(Sq. Miles)

Reservoir (Acres)

(Miles)

Fecal Coliform - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K35R-07-BAC Roundhill Swamp

Cause Location: Round Hill Swamp from the confluence of Horsepen Branch and Indigo Branch, north of Round Hill Road, west of

Appleton Road.

City / County: Southampton Co. Surry Co. Sussex Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

The Recreation Use is impaired for E. coli due to data collected at Station 5ARHS004.20 (2 viol / 12 obs).

TMDL Cycle First Dev. Cause Water Listed Priority Size Category Cause Name Assessment Unit / Water Name / Location Desc. 5A Escherichia coli (E. coli) 2020 L 4.02

VAT-K35R_RHS03A20 / Roundhill Swamp / Round Hill Swamp from the confluence of Horsepen Branch and Indigo Branch, north of

Round Hill Road, west of Appleton Road.

Roundhill Swamp

Recreation

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

4.02

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K35R-08-BEN **Round Hill Swamp**

Cause Location: The cause encompasses Round Hill Swamp between the confluence with Seacock Swamp and Rt. 623

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

Aquatic Life Use is impaired based on benthic impairments (Benthic ProbMon-Benthic IM [MI:S-'05] at station 5ARHS000.39.

2008 K35R-08-BEN

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Cycle First Listed	TMDL Dev. Priority	Water Size
VAT-K35R_RHS01A08 / Round Hill Swamp / Confluence of Seacock Swamp between State Route 614 and State Route 623	5A Benthic Macroinvertebrates Bioassessments	2008	L	0.64
Round Hill Swamp	Fat.	iomi. Di		Divor

Round Hill Swamp **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) **Aquatic Life** 0.64

Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K36R-01-DO Blackwater - Lower Middle

Cause Location: Segment includes water from west of Franklin Municipal Airport downstream to Cox Landing downstream to RM

0.65 (at Suffolk City & Gates County line).

City / County: Isle Of Wight Co. Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 4C

The Aquatic Life Use impairment is retained. The DO impairment is Cat 4C based on EPA approval letter dated April 8, 2010 to confirm all six Blackwater segments are impaired due to natural conditions and therefore move to Category 4C. In the EPA approval letter, "it is EPAs understanding that VADEQ will request that Blackwater River (Middle, Lower-Middle, Lower. Mouth) be formally reclassified as a Class VII Swamp Water during the next triennial review of the Virginia's Water Quality Standards". Water remain in Class II with a Cat 4C until Triennial Review.

Cau	se	-)	rst Dev.	Water
Assessment Unit / Water Name / Location Desc. Cate	gory Cause Name	Lis	ted Priority	Size
VAT-K36R_BLW02A08 / Blackwater River - Middle / Segment includes water from east of Edgehill to west of the Franklin Municipal John Beverly Rose Airport.	Dissolved Oxygen			3.85
VAT-K36R_BLW03A08 / Blackwater River - Middle / Segment begins west of the Franklin Municipal John Beverly Rose Airport and ends at the Blackwater Landing in Franklin.	Dissolved Oxygen			2.23
VAT-K36R_BLW05A08 / Blackwater River - Lower / From Cox Landing downstream to downstream to VA/NC state line	Dissolved Oxygen			5.10
Blackwater - Lower Middle		Estuary	Reservoir	River
Aquatic Life		(Sq. Miles)	(Acres)	(Miles)
Dissolved Oxygen - Total Impair	ed Size by Water Type:			11.18

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K36R-02-BAC Blackwater River - Lower Middle

Cause Location: This cause encompasses the lower Blackwater River from RM 13.76 (downstream of Franklin, confluence of UT,

parallel to Hayden High School) downstream west of Union Camp Holding Pond. And from South of the Isle of

Wight / Suffolk line beginning at Rt 58 do

City / County: Isle Of Wight Co. Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

The Recreation Use is impaired based on E.coli data from DEQ (AQM) stations:

5ABLW012.28 (6 viol / 32 obs); 5ABLW009.14 (4 viol / 34 obs); 5ABLW009.80 (4 viol / 33 obs).

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAT-K36R_BLW04C12 / Blackwater River - Lower Middle / South 5A Escherichia coli (E. coli) of the Isle of Wight / Suffolk line beginning at Rt 58 downstream to

of the Isle of Wight / Suffolk line beginning at Rt 58 downstream to Cox Landing

Blackwater River - Lower Middle

Recreation

Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

2012

4.06

4.06

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K36R-02-BEN Black Creek

Cause Location: This cause encompasses the Black Creek Located NW of Burdette. From Wades Pond downstream to mouth.

Tributary to Blackwater R. with confluence at RM 22.0.

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

The Aquatic Life Use impairment is retained based on the Benthic data collected at Station 5ABLC000.88 (Benthic ProbMon-

Benthic IM [MI:F-'03, VI:S-'03]).

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size 2008 4.95 VAT-K36R_BLC01A06 / Black Creek / Located NW of Burdette. 5A Benthic Macroinvertebrates From Wades Pond downstream to mouth. Tributary to Blackwater R. Bioassessments with confluence at RM 22.0.

Black Creek

Aquatic Life

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type: 4.95

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K36R-02-DO Blackwater River - Lower Middle

Cause Location: This cause encompasses the area from RM 13.76 (downstream of Franklin, confluence of UT, parallel to Hayden

High School) downstream west of Union Camp Holding Pond.

City / County: Isle Of Wight Co. Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 4C

The Aquatic Life Use is impaired based on DO data at DEQ (AQM) stations @ 5ABLW013.16 (12 violations / 35 observations), 5ABLW012.96 (7 violations / 18 observations), 5ABLW012.28 (15 violations / 35 observations), 5ABLW011.48 (8 violations / 18 observations), 5ABLW010.60 (7 violations / 18 observations), 5ABLW009.80 (15 violations / 35 observations), 5ABLW009.14 (11 violations / 36 observations). DO impairment is Cat 4C based on EPA approval letter dated April 15, 2010 to confirm all six Blackwater segments are impaired due to natural conditions and therefore move to Category 4C.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	F	Sycle TMDI First Dev. isted Priorit	Water
VAT-K36R_BLW04A08 / Blackwater River - Lower Middle / From Blackwater Landing in Franklin the southern end of the industrial waste ponds in Isle of Wight.	4C Dissolved Oxygen			2.83
VAT-K36R_BLW04B12 / Blackwater River - Lower Middle / From Industrial Waste Ponds near Isle of Wight and Suffolk line to US-58.	4C Dissolved Oxygen			0.69
VAT-K36R_BLW04C12 / Blackwater River - Lower Middle / South of the Isle of Wight / Suffolk line beginning at Rt 58 downstream to Cox Landing	4C Dissolved Oxygen			4.06
VAT-K36R_BLW06A20 / Blackwater River - Lower Middle / Blackwater River south of Route 58 and north of South Quay Road.	4C Dissolved Oxygen			0.68
Blackwater River - Lower Middle Aquatic Life		Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
•	mpaired Size by Water Type:	· · · · · · · · · · · · · · · · · · ·	(, , , , , , , , , , , , , , , , , , ,	8.26

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K36R-03-BAC **Black Creek- Upper**

Cause Location: This cause encompasses the upper portion of Black Creek parallel with State Route 503. Southeast of Whitefields

Millpond and Johnson Millpond.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

Recreation Use is impaired based on E.coli data collected at station 5ABLC006.97 with 4 viol / 24 obs with a 16.6 % violation

rate.

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size VAT-K36R_BLC02A10 / Black Creek - Upper / Segment parallel Escherichia coli (E. coli) 2010 3.29

with State Route 503. Southeast of Whitefields Millpond and Johnson Millpond.

Black Creek- Upper

Estuary Reservoir River (Sq. Miles) (Acres) (Miles) Recreation

> Escherichia coli (E. coli) - Total Impaired Size by Water Type: 3.29

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K36R-03-DO Washole Creek

Cause Location: This cause encompasses the area at the confluence of Blackwater. East of Franklin Sewage Disposal. South of US

Hwy 58.

City / County: Isle Of Wight Co.

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 4C

The Aquatic Life Use is impaired based on DO data (10 violations / 33 observations) at station 5AWAC000.03. The DO impairment is Cat 4C based on EPA approval letter dated April 15, 2010 to confirm all six Blackwater segments are impaired due to natural conditions and therefore move to Category 4C.

Assessment Unit / Water Name / Location Desc.

Cause Category Cause Name

Cycle TMDL First Dev. Water Listed Priority Size

VAT-K36R_WAC01A08 / Washole Creek / Segment at the confluence of Blackwater. East of Franklin Sewage Disposal. South of US Hwy 58.

4C Dissolved Oxygen

0.55

Washole Creek

Aquatic Life

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type:

0.55

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K36R-04-BAC **Cypress Swamp**

Cause Location: This cause encompasses Cypress Swamp from town of Sedley downstream to Route 611.

City / County: Isle Of Wight Co. Southampton Co. Suffolk City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

The Recreation Use is impaired (3 violations / 12 observations) at Station 5ACYS001.92.

Cycle **TMDL** First Cause Dev. Water Priority Listed Size Assessment Unit / Water Name / Location Desc. Category Cause Name 2012 5.16 VAT-K36R_CYS01A12 / Cypress Swamp / Swamp off of 5A Escherichia coli (E. coli)

Blackwater River. From Town of Sedley downstream to Route 611.

Cypress Swamp Estuary Reservoir River (Sq. Miles) (Acres) (Miles) Recreation 5.16

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K36R-04-BEN **Unsegmented Tributary to Blackwater**

Cause Location: This cause encompasses the Unsegmented River from Blackwater South of Franklin to North of State Hwy 58.

City / County: Southampton Co. Suffolk City

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

The Aquatic Life Use is impaired based on Benthic Impairments. The Benthic ProbMon is impaired [VI:S&F-'06, 07] AT DEQ (ProbMon) Station @ 5AXGI001.79.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Cycl Firs Liste		Water Size
VAT-K36R_XGI01A08 / Unsegmented Tributary to Blackwater / Unsegmented river from Blackwater south of Franklin and north of State Hwy 58	5A Benthic Macroinvertebrates Bioassessments	2008	3 L	2.75
Unsegmented Tributary to Blackwater	I	Estuary F	Reservoir	River

(Acres)

(Miles)

2.75

(Sq. Miles) **Aquatic Life**

Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K36R-07-BAC Blackwater River - Upper

Cause Location: This cause encompasses the Blackwater River segment north of Maynards Crossroads and State Hwy 630 and

ends at Jovners Bridge

City / County: Isle Of Wight Co. Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

Recreation Use impairment is retained with 3 viol / 30 observation. Additional samples needed for delist. Recreation Use was

impaired based on data at station 5ABLW022.84 with 4 viol / 32 obs in 2016 IR.

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size Escherichia coli (E. coli) 2016 2.47 VAT-K36R_BLW02B08 / Blackwater River - Upper / Segment

begins north of Maynards Crossroads and State Hwy 630 and ends at Joyners Bridge.

Blackwater River - Upper **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) Recreation

> Escherichia coli (E. coli) - Total Impaired Size by Water Type: 2.47

Sources:

Source Unknown

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Chowan River and Dismal Swamp Basins

Cause Group Code: K36R-08-BAC Ducks Swamp

Cause Location: This cause encompasses the area from the confluence with Jenkins Swamp upstream to confluence with

Corrowaugh Swamp -north of Walters and Aqueduct.

City / County: Isle Of Wight Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

Recreation Use is not supported based on E.coli data collected at station 5ADKS000.09 with 3 viol / 24 obs. Station was

supporting based on Ecoli in the 2016 IR.

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

AT-K36R DKS01A10 / Ducks Swamp / From confluence with 5A Escherichia coli (E. coli) 2018 L 2.61

VAT-K36R_DKS01A10 / Ducks Swamp / From confluence with Jenkins Swamp upstream to confluence with Corrowaugh Swamp - north of Walters and Aqueduct.

Ducks Swamp

Recreation

Reservoir River (Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 2.61

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K36R-09-BAC Black Creek

Cause Location: Located NW of Burdette. From Wades Pond downstream to mouth. Tributary to Blackwater R. with confluence at

RM 22.0.

City / County: Southampton Co.

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

Due to E. coli data collected at station 5ABLC002.55 (2 viol/ 12 obs) this AU's Recreation Use is impaired.

TMDL Cycle First Dev. Cause Water Listed **Priority** Size Category Cause Name Assessment Unit / Water Name / Location Desc. VAT-K36R_BLC01A06 / Black Creek / Located NW of Burdette. Escherichia coli (E. coli) 2020 L 4.95 From Wades Pond downstream to mouth. Tributary to Blackwater R.

From Wades Pond downstream to mouth. I ributary to Blackwater R. with confluence at RM 22.0.

Black Creek
Recreation
Estuary (Sq. Miles)
Reservoir (Miles)
Reservoir (Miles)
Reservoir (Miles)
River (Miles)
4.95

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K37R-01-PH **Buckhorn Creek**

Cause Location: This cause encompasses all of Northern Branch of Buckhorn Creek (within Virginia).

City / County: Southampton Co.

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 4C

The Aquatic Life Use is impaired due to depressed pH concentrations, impairment continued from 2004 IR at DEQ (AQM) station @ 5AXDN000.48 (segment Class change from III to VII, can not delist previous impairments since no current data). A natural conditions report is complete that determined the pH impairment was not influenced by anthropogenic sources.

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size VAT-K37R XDN01A00 / Buckhorn Creek / All of Northern Branch 4C pH 1.52 of Buckhorn Creek (within Virginia).

Buckhorn Creek Estuary Reservoir River (Sq. Miles) (Acres) (Miles) **Aquatic Life** 1.52

pH - Total Impaired Size by Water Type:

Sources:

Naturally Occurring Organic Acids

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Chowan River and Dismal Swamp Basins

Cause Group Code: K38R-01-BEN **Somerton Creek**

Cause Location: This cause encompasses the area of Somerton Creek from 5 miles upstream from monitoring station (RM 10.36)

downstream to VA/NC state line.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

The Aquatic Life Use is impaired based on the Benthic Impairments at Station 5ASTN008.78. Station 5ASTN008.78 Benthic

IM [MI:F-'04].

TMDL Cycle Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size VAT-K38R_STN01A00 / Somerton Creek / Somerton Creek from 5 5A 2006 9.38 **Benthic Macroinvertebrates** Bioassessments

miles upstream from monitoring station (RM 10.36) downstream to VA/NC state line.

Somerton Creek **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) **Aquatic Life**

Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type: 9.38

Sources:

Source Unknown

Appendix 5 - 2339 Final 2020

Chowan River and Dismal Swamp Basins

Cause Group Code: K38R-02-BAC **March Swamp**

Cause Location: This cause encompasses entirety of March Swamp. Northeast of Factory Hill. Northern tributary to Somerton Creek.

City / County: Suffolk City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

The Recreation Use is impaired based on E.coli data at DEQ (AQM) station @ 5AMAR001.65 with 2 viol / 15 obs.

Cycle **TMDL** First Cause Dev. Water Priority Listed Assessment Unit / Water Name / Location Desc. Category Cause Name Size 2008 7.71 VAT-K38R_MAR01A06 / March Swamp / Northeast of Factory Hill. 5A Escherichia coli (E. coli) Northern tributary to Somerton Creek. Entirety of swamp.

March Swamp Estuary Reservoir River (Sq. Miles) (Acres) (Miles) Recreation 7.71

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K38R-04-BAC **Jones Swamp**

Cause Location: This cause encompasses from Spivey Swamp near Rt. 643 (Arthur Dr) upstream to confluence with Quaker Swamp

near Route 664.

City / County: Suffolk City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

The Recreation is impaired with 4 viol / 17 obs for E. Coli @ DEQ Station 5AJNS001.89.

TMDL Cycle First Dev. Cause Water Listed **Priority** Size Category Cause Name Assessment Unit / Water Name / Location Desc. VAT-K38R_JNS01A14 / Jones Swamp / Trib to Spivey Swamp Escherichia coli (E. coli) 2014 L 3.80

near Rt. 643 (Arthur Dr) upstream to confluence with Quaker Swamp

near Route 664.

Jones Swamp **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) Recreation 3.80

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K38R-06-BAC **Somerton Creek**

Cause Location: This cause encompasses Somerton Creek from 5 miles upstream from monitoring station (RM 10.36) downstream

to VA/NC state line.

City / County: Suffolk City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

Recreation Use impaired based on E. coli data from station 5ASTN008.78 with 7 viol/34 viol.

TMDL Cycle First Dev. Cause Water Listed Priority Size Category Cause Name Assessment Unit / Water Name / Location Desc. VAT-K38R_STN01A00 / Somerton Creek / Somerton Creek from 5 5A Escherichia coli (E. coli) 2016 L 9.38

miles upstream from monitoring station (RM 10.36) downstream to

VA/NC state line.

Somerton Creek **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) Recreation 9.38

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K38R-07-DO Jones Swamp

Cause Location: This cause encompasses the Trib to Spivey Swamp from Rt. 643 (Arthur Dr) upstream to confluence with Quaker

Swamp near Route 664.

City / County: Suffolk City

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

The Aquatic Life Use is not supported based on DO data collected at station 5AJNS001.89 with 12 viol/ 17 obs. Impairment is

suspected to be natural conditions.

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size VAT-K38R_JNS01A14 / Jones Swamp / Trib to Spivey Swamp Dissolved Oxygen 2018 3.80

near Rt. 643 (Arthur Dr) upstream to confluence with Quaker Swamp near Route 664.

Jones Swamp Estuary Reservoir River (Sq. Miles) (Acres) (Miles) **Aquatic Life**

> Dissolved Oxygen - Total Impaired Size by Water Type: 3.80

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K39L-01-HG Lake Drummond

Cause Location: This cause encompasses the entirety of lake Drummond within the Great Dismal Swamp National Wildlife Refuge.

Located on City of Suffolk/City of Chesapeake boundary near NC state line.

City / County: Chesapeake City Suffolk City

Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

The Fish Consumption Use is impaired based on the VDH fish consumption advisory for Bowfin and Chain Pickerel (issued 10/2003 & modified 7/27/05, 8/31/2007 recommending no more than two meals/month due to Hg reported in fish tissue).

Assessment Unit / Water Name / Location Desc.

Cause Category Cause Name

Mercury in Fish Tissue

Cycle TMDL First Dev. Water Listed Priority Size

3.241.96

VAT-K39L_LKD01A06 / Lake Drummond / Within the Great Dismal Swamp National Wildlife Refuge. Located on City of Suffolk/City of Chesapeake boundary near NC state line. Entirety of lake.

Lake Drummond
Fish Consumption

Estuary Reservoir River (Sq. Miles) (Acres) (Miles)

3,241.96

2006

Mercury in Fish Tissue - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K39L-01-PH Lake Drummond

Cause Location: This cause encompasses the entirety of lake Drummond within the Great Dismal Swamp National Wildlife Refuge.

Located on City of Suffolk/City of Chesapeake boundary near NC state line.

City / County: Chesapeake City Suffolk City

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

The Aquatic Life Use is impaired based on the pooled pH exceedance of the criteria for this parameter with a violation rate of

100% (113 violates/113 obs.).

Assessment Unit / Water Name / Location Desc.

Cause Category Cause Name

Cycle TMDL First Dev. Water Listed Priority Size

VAT-K39L_LKD01A06 / Lake Drummond / Within the Great Dismal Swamp National Wildlife Refuge. Located on City of Suffolk/City of Chesapeake boundary near NC state line. Entirety of lake.

5C pH

2008 L 3.241.96

(Miles)

Estuary Reservoir River

(Acres)

(Sq. Miles)

pH - Total Impaired Size by Water Type: 3,241.96

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses

Needed

Lake Drummond

Aquatic Life

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K39R-01-HG Dismal Swamp Canal & Feeder Ditch to Lake Drummond

Cause Location: This cause encompasses the Dismal Swamp Canal from Deep Creek Locks to VA/NC state line and including

Feeder Ditch to Lake Drummond and unsegmented rivers in K39R.

City / County: Chesapeake City

Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

The Fish Consumption Use is impaired based on the VDH fish consumption advisory for Bowfin and Chain Pickerel (issued

10/2003 & modified 7/27/05, recommending no more than two meals/month due to Hg reported in fish tissue).

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size Mercury in Fish Tissue 2004 13.21 VAT-K39R XCK01A00 / Dismal Swamp Canal & Feeder Ditch to Lake Drummond / Dismal Swamp Canal from Deep Creek Locks to VA/NC state line and including Feeder Ditch to Lake Drummond.

Dismal Swamp Canal & Feeder Ditch to Lake Drummond

Fish Consumption

Estuary

(Sq. Miles)

Reservoir

(Acres)

River

(Miles)

Mercury in Fish Tissue - Total Impaired Size by Water Type: 13.21

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K39R-02-HG Unsegmented rivers in K39R

Cause Location: This cause encompasses the non-segmented rivers-feeder ditches within K39.

City / County: Chesapeake City Suffolk City

Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

Fish Consumption Use impairment for Mercury is retained for 2018 IR. Monitoring data at Station 5B-GDS-ED is from 2005. The feeder ditches flow to Lake Drummond which is impaired for Fish Consumption based on a VDH Fish Consumption

Advisory.

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size Mercury in Fish Tissue 2010 15.28 VAT-K39R ZZZ01B08 / Unsegmented rivers in K39R / Evaluated 5A

non-segmented areas of K39. majority of waters are feeder ditches to

Lake Drummond.

Unsegmented rivers in K39R Estuary Reservoir River
Fish Consumption (Sq. Miles) (Acres) (Miles)

Mercury in Fish Tissue - Total Impaired Size by Water Type: 15.28

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K39R-03-BAC Adams Swamp

Cause Location: This cause encompasses the Swamp in its entirety located in Suffolk from NC/VA border near Route 673 to

headwaters.

City / County: Chesapeake City Suffolk City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

Recreation Use is impaired based on Ecoli data collected at station 5BADA002.34 with 6 viol / 11 obs.

TMDL Cycle Cause First Dev. Water Listed Priority Size Category Cause Name Assessment Unit / Water Name / Location Desc. VAT-K39R_ADA01A18 / Adams Swamp / Swamp in its entirety Escherichia coli (E. coli) 2018 L 2.99

located in Suffolk from NC/VA border near Route 673 to headwaters.

Adams Swamp

Recreation

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 2.99

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K39R-03-DO **Adams Swamp**

Cause Location: This cause encompasses the Swamp in its entirety located in Suffolk from NC/VA border near Route 673 to

headwaters.

City / County: Chesapeake City Suffolk City

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5C

The Aquatic Life Use is impaired based on pH and DO data collected at station 5BADA002.34. Data collected at the station has

7 viol / 11 obs for DO and 8 viol / 11 obs for pH.

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size Dissolved Oxygen 2018 2.99 VAT-K39R_ADA01A18 / Adams Swamp / Swamp in its entirety

located in Suffolk from NC/VA border near Route 673 to headwaters.

Adams Swamp **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) **Aquatic Life** 2.99

Dissolved Oxygen - Total Impaired Size by Water Type:

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K39R-03-PH **Adams Swamp**

Cause Location: This cause encompasses the Swamp in its entirety located in Suffolk from NC/VA border near Route 673 to

headwaters.

City / County: Chesapeake City Suffolk City

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

The Aquatic Life Use is impaired based on pH and DO data collected at station 5BADA002.34. Data collected at the station has

7 viol / 11 obs for DO and 8 viol / 11 obs for pH.

Cycle **TMDL** Dev. Cause First Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size 5C pH 2018 2.99 VAT-K39R ADA01A18 / Adams Swamp / Swamp in its entirety

located in Suffolk from NC/VA border near Route 673 to headwaters.

Adams Swamp **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) **Aquatic Life** 2.99

pH - Total Impaired Size by Water Type:

Sources:

Natural Sources

Chowan River and Dismal Swamp Basins

Cause Group Code: K39R-04-DO Cypress Swamp

Cause Location: Cyprus Swamp from the confluence of Council Swamp and Dragon Swamp eastward to West Ditch.

City / County: Chesapeake City Suffolk City

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5A

The Aquatic Life Use is impaired due to DO data collected at Station 5BCYS001.65 (7 viol / 12 obs).

Cause Cycle TMDL
First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAT-K39R_CYS01A20 / Cypress Swamp / Cyprus Swamp from 5A Dissolved Oxygen 2020 L 4.56

the confluence of Council Swamp and Dragon Swamp eastward to

the confluence of Council Swamp and Dragon Swamp eastward to West Ditch.

Cypress Swamp
Aquatic Life

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type: 4.56

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K40R-01-DO Unnamed tributary to Northwest River

Cause Location: This cause encompasses the Unnamed trib to Northwest River from St Brides Rd crossing to confluence with

Northwest River. Within PWS area.

City / County: Chesapeake City

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 4A

Aquatic Life Use impairment is due to low dissolved oxygen concentrations (20/30) at DEQ (AQM) station @ 5BXAM000.60. A Total Maximum Daily Load was developed for the Northwest River Watershed for Total Phosphorus due to Low Dissolved

Oxygen. EPA Approved 4/26/2011.

Cause
Assessment Unit / Water Name / Location Desc.
Category

Assessment Unit / Water Name / Location Desc. Category Cause Name
VAT-K40R XAM01A02 / Unnamed tributary to Northwest River 4A Dissolved Oxygen

(PWS) / Unnamed trib to Northwest River from St Brides Rd crossing to confluence with Northwest River. Within PWS area.

Unnamed tributary to Northwest River

Aquatic Life

Dissolved Oxygen - Total Impaired Size by Water Type:

Sources:

Contaminated Groundwater Municipal Point Source

Municipal Point Source Discharges Non-Point Source

Runoff from Forest/Grassland/Parkland

Cycle

First

Listed

2002

Estuary

(Sq. Miles)

TMDL

Dev.

Priority

Reservoir

(Acres)

Water

Size

4.06

River

(Miles)

4.06

Chowan River and Dismal Swamp Basins

Cause Group Code: K40R-02-BAC Northwest River - Middle (PWS)

Cause Location: This cause encompasses Northwest River from RM 16.63 (start of PWS) to RM 12.0 near 168 . Upstream of Pine

Grove Lane, downstream to 168.

City / County: Chesapeake City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

E. coli data impaired with 5 viol/32 obs at station 5BNTW012.86

TMDL Cycle First Dev. Cause Water Listed **Priority** Size Category Cause Name Assessment Unit / Water Name / Location Desc. VAT-K40R_NTW02A00 / Northwest River - Middle (PWS) / Escherichia coli (E. coli) 2006 L 5.69

Northwest River from RM 16.63 (start of PWS) to RM 12.0 near 168.

Upstream of Pine Grove Lane, downstream to 168.

Northwest River - Middle (PWS)

Recreation

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

5.69

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K40R-02-DO Northwest River (Upper, Middle, Lower & Mouth)

Cause Location: This cause encompasses all of the Northwest River.

City / County: Chesapeake City

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 4A

The Aquatic Life Use is impaired based on low dissolved oxygen. The DO was assessed using Stations 5BNTW012.86 (21/32), 5BNTW011.90(19/32), 5BNTW008.97 (8/32), 5BNTW009.49 (9/32), 5BNTW010.23 (10/32), & Station 5BNTW007.49(9 violates /32 obs.). EPA approved TMDL April 26,2011.

Assessment Unit / Water Na	ame / Location Desc.	Cause Catego	e ry Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
	to 16.63, upstream of Chesapeakoneadwaters downstream to start of		Dissolved Oxygen		1998	L	7.43
VAT-K40R_NTW02A00 / North Northwest River from RM 16.63 (Upstream of Pine Grove Lane, do	start of PWS) to RM 12.0 near 16	4A 8 .	Dissolved Oxygen		1998	L	5.69
VAT-K40R_NTW03A08 / Northw Northwest River from 168 to the I	` ,	4A	Dissolved Oxygen		1998	L	2.82
VAT-K40R_NTW04A08 / Northw Northwest River below Indian Cre VA state line @ RM 7.49.	west River - Mouth (PWS) / eek confluence downstream to the	4A	Dissolved Oxygen		2010	L	1.90
Northwest River (Upper, Middle	, Lower & Mouth)			Estuary (Sq. Miles)		servoir cres)	River (Miles)
•	Dissolved Oxygen - Total	Impaire	d Size by Water Type:				17.84
Sources:							
Agriculture	Contaminated Groundwater	Separ	arges from Municipal ate Storm Sewer ns (MS4)	Municipal Point Source Discharges			
Non-Point Source	On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)	Runof Forest	from /Grassland/Parkland	Source	Unkno	wn	

Chowan River and Dismal Swamp Basins

Cause Group Code: K40R-04-BAC Northwest River - Lower (PWS)

Cause Location: Northwest River from 168 to the Indian Creek Confluence

City / County: Chesapeake City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

The Recreation Use is impaired in the 2020 IR cycle due to impaired E. coli data collected at Stations 5BNTW009.49, 5BNTW010.23, and 5BNTW011.90 ((4 viol / 33 obs), (4 viol / 33 obs), (4 viol, 33 obs)).

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Fir List		Water Size
VAT-K40R_NTW03A08 / Northwest River - Lower (PWS) / Northwest River from 168 to the Indian Creek Confluence	5A Escherichia coli (E. coli)	201	6 L	2.82
Northwest River - Lower (PWS)			Reservoir	River
Recreation	(Sq. Miles)	(Acres)	(Miles)
Escherichia coli (E. coli) - Tot	al Impaired Size by Water Type:			2.82

Cycle TMDL

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K40R-04-HG **Northwest River - Middle**

Cause Location: This cause encompasses the Northwest River from RM 16.63 (start of PWS) to RM 12.0 near 168 . Upstream of

Pine Grove Lane, downstream to 168.

City / County: Chesapeake City

Use(s): Fish Consumption

Cause(s) / VA Category: Mercury in Fish Tissue / 5A

The Fish Consumption Use is impaired based on FT data collected at Station 5BNTW011.90. The mercury Fish Tissue Value

was violated in 2007 (07-IM- FT Met Hg Largemouth Bass & Bowfin).

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size Mercury in Fish Tissue 2010 5.69 VAT-K40R NTW02A00 / Northwest River - Middle (PWS) /

Northwest River from RM 16.63 (start of PWS) to RM 12.0 near 168.

Upstream of Pine Grove Lane, downstream to 168.

Northwest River - Middle **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) **Fish Consumption**

5.69

Mercury in Fish Tissue - Total Impaired Size by Water Type:

Sources:

Source Unknown

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Chowan River and Dismal Swamp Basins

Cause Group Code: K40R-06-DO **Indian Creek tributary to Northwest River**

Cause Location: This cause encompasses the area from the St. Brides Rd. crossing downstream to the confluence with the

Northwest River, Located southeast of Saint Brides.

City / County: Chesapeake City

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 4A

The Aquatic Life Use impairment is due to low dissolved oxygen concentrations (8/33) at DEQ (AQM) stations @ 5BIND001.15. Not determined to be natural conditions therefore a TMDL was completed and EPA approved 4/26/2011 that assigned a TP

3.46

3.46

endpoint for the DO impairment.

Cycle **TMDL** Cause First Dev. Water **Priority** Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Size 2002

VAT-K40R IND01A02 / Indian Creek tributary to Northwest River / Dissolved Oxygen From the St. Brides Rd. crossing downstream to the confluence with

the Northwest River. Located southeast of Saint Brides.

Indian Creek tributary to Northwest River **Estuary** Reservoir River (Sq. Miles) (Acres) (Miles) **Aquatic Life**

Dissolved Oxygen - Total Impaired Size by Water Type:

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K40R-08-BAC **Unnamed tributary to Northwest River (PWS)**

Cause Location: Unnamed trib to Northwest River from St Brides Rd crossing to confluence with Northwest River. Within PWS area.

City / County: Chesapeake City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

Recreation Use is impaired due to E. coli data collected at Station at 5BXAM000.60 (4 viol / 32 obs).

Cycle **TMDL** First Cause Dev. Water Priority Listed Size Assessment Unit / Water Name / Location Desc. Category Cause Name 2006 4.06 VAT-K40R_XAM01A02 / Unnamed tributary to Northwest River Escherichia coli (E. coli) (PWS) / Unnamed trib to Northwest River from St Brides Rd crossing to confluence with Northwest River. Within PWS area.

Unnamed tributary to Northwest River (PWS)

Estuary Reservoir River (Sq. Miles) (Acres) (Miles) Recreation

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 4.06

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K40R-09-BAC **Indian Creek tributary to Northwest River**

Cause Location: From the St. Brides Rd. crossing downstream to the confluence with the Northwest River. Located southeast of

Saint Brides.

City / County: Chesapeake City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

The Recreation Use is impaired based on E.coli data collected at station 5BIND001.15 with 8 viol / 31 obs.

TMDL Cycle First Dev. Cause Water Listed **Priority** Size Assessment Unit / Water Name / Location Desc. Category Cause Name VAT-K40R_IND01A02 / Indian Creek tributary to Northwest River / 5A Escherichia coli (E. coli) 2006 L 3.46

From the St. Brides Rd. crossing downstream to the confluence with

the Northwest River, Located southeast of Saint Brides.

Indian Creek tributary to Northwest River

Estuary Reservoir River (Sq. Miles) (Acres) (Miles) Recreation 3.46

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Source Unknown

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Chowan River and Dismal Swamp Basins

Cause Group Code: K41R-01-BEN Pocaty River

Cause Location: This cause encompasses the Pocaty River and selected tribs. from headwaters at mile 3.92 to confluence with

North Landing River at mile 0.00.

City / County: Chesapeake City Virginia Beach City

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

The Aquatic Life Use impairment is retained based on benthic impairment. Data collected at station 5BPCT002.16 MI: S-03 and

VI: F-03.

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size VAT-K41R_PCT01A02 / Pocaty River / Pocaty River and selected 2010 7.43 5A **Benthic Macroinvertebrates** tribs, from headwaters at mile 3.92 to confluence with North Landing Bioassessments

River at mile 0.00.

Pocaty River

Aquatic Life

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Benthic Macroinvertebrates Bioassessments - Total Impaired Size by Water Type: 7.43

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K41R-01-DO **Pocaty River**

Cause Location: This cause encompasses the Pocaty River and selected tribs, from headwaters at mile 3.92 to confluence with

North Landing River at mile 0.00.

City / County: Chesapeake City Virginia Beach City

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 4A

The Aquatic Life Use is impaired based on low dissolved oxygen concentrations. The cause of the depressed dissolved oxygen

concentrations is suspected to be naturally occurring. DO violates 17/34 obs at Station 5BPCT001.79

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size VAT-K41R_PCT01A02 / Pocaty River / Pocaty River and selected Dissolved Oxygen 2002 7.43 tribs, from headwaters at mile 3.92 to confluence with North Landing

River at mile 0.00.

Pocaty River Estuary Reservoir River (Sq. Miles) (Acres) (Miles) **Aquatic Life**

> Dissolved Oxygen - Total Impaired Size by Water Type: 7.43

Sources:

Urban Runoff/Storm Sewers Crop Production (Crop Land Non-Point Source Source Unknown

or Dry Land)

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Chowan River and Dismal Swamp Basins

Cause Group Code: K41R-02-BAC Milldam Creek - Lower

Cause Location: This cause encompasses the tidally influenced portion of Milldam Creek from Blackwater Rd. crossing (RM 1.92) to

confluence with North landing River @ RM 0.00.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

The Recreation Use is impaired due to E.coli concentrations exceeding the swimming indicator criteria (4/32) at DEQ (AQM)

station @ 5BMLD001.92. TMDL EPA approved 9/27/2005.

Cause Category Cause Name		First	Dev.	Water Size
4A	Escherichia coli (E. coli)	1998	L	2.54
c	Categor		Category Cause Name Listed	Cause First Dev. Category Cause Name Listed Priority

Milldam Creek - Lower Estuary Reservoir River Recreation (Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 2.54

Cycle TMDI

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K41R-02-DO Milldam Creek - Lower

Cause Location: This cause encompasses the tidally influenced portion of Milldam Creek from Blackwater Rd. crossing (RM 1.92) to

confluence with North Landing River @ RM 0.00.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 4A

Aquatic Life Use is impairment due to low dissolved oxygen concentrations (12 viol /34 obs) at DEQ (AQM) station @ 5BMLD001.92. The pH is supporting (0 viol / 35 obs). A Stressor Report was developed for the Dissolved Oxygen Assessment for Virginia Beach (Albemarle Canal/ North Landing River, Milldam Creek, West Neck Creek (middle), and Nawney Creek). EPA Approved letter for 4A 12/14/2010. It was determined that the approved bacterial TMDL should significantly reduce organic matter and nutrients and thus a TMDL specifically addressing DO is not required. However, if conditions do not improve through implementation of the Bacteria TMDL consideration will be given to develop an additional TMDL for DO.

•					2.54
Milldam Creek - Lower Aguatic Life		Estuary (Sq. Miles)		ervoir cres)	River (Miles)
AT-K41R_MLD02A06 / Milldam Creek - Lower / Tidally offluenced portion of Milldam Creek from Blackwater Rd. crossing 1.92) to confluence with North landing River @ RM 0.00.	4A Dissolved Oxygen ng	2	2006	L	2.54
Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		irst sted	TMDL Dev. Priority	Water Size

Grazing in Riparian or Shoreline Zones

Non-Point Source

On-site Treatment Systems (Septic Systems and Similar Decentralized Systems) Rural (Residential Areas)

Chowan River and Dismal Swamp Basins

Cause Group Code: K41R-03-DO Albemarle Canal & North Landing River - Middle

Cause Location: This cause encompasses the Albemarle Canal (Intracoastal Waterway) and North Landing River from the Great

Bridge Locks downstream to confluence with West Neck Creek.

City / County: Chesapeake City Virginia Beach City

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 4A

The Aquatic Life Use impairment is retained. Current data within assessment window is 0 viol / 1 obs for dissolved oxygen at Station 5BAAC000.49. Low DO impairment at 5BNLR013.61 has 14 viol / 36 obs. EPA approved TMDL 1/13/2011 for Albemarle Canal/ North Landing River.

1999 CD segment for DO (Attachment B) VAT-K41R-03.

Dissolved Oxygen - Total	Impaired Size by Water Type:				10.70
Albemarle Canal & North Landing River - Middle Aquatic Life		Estuary (Sq. Miles)		ervoir cres)	River (Miles)
VAT-K41R_NLR02A06 / North Landing River - Middle / From confluence with Intracoastal Waterway (RM 13.65) downstream to instream Island (RM 12.01, upstream of confluence of West Neck Creek).	4A Dissolved Oxygen		2006	L	2.15
VAT-K41R_AAC01A06 / Albemarle Canal (upstream of North Landing River) / Albemarle and Chesapeake Canal (Intracoastal Waterway) from Great Bridge Locks downstream to confluence with North Landing River (RM 13.65).	4A Dissolved Oxygen		2002	L	8.55
Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		Sycle First Listed	Dev. Priority	Water Size

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K41R-05-BAC West Neck Creek - Middle

Cause Location: This cause encompasses the segment from southside of Princess Anne Road crossing (RM 6.20) downstream to

widening of creek (RM 3.10) approx. 0.55 mi downstream of Indian River Road crossing.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Recreation Use is impaired based on Ecoli data collected at station 5BWNC003.65 with 4 viol / 15 obs. Initial impairment

(2002 cycle) (TMDL ID: VAT-K41R-05) based on fecal coliform.

A Bacterial TMDL was developed for the Virginia Beach Coastal Area (London Bridge Creek & Canal # 2, Milldam Creek,

Nawney Creek, West Neck Creek (Middle), and West Neck Creek (Upper)) and was approved by EPA 9/05.

Assessment Unit / Water Name / Location Desc.	Cause Catego	e ry Cause Name	Cycle First Listed	TMDL Dev. Priority	Water Size
VAT-K41R_WNC01A00 / West Neck Creek - Middle / Segment from south side of Princess Anne Road crossing (RM 6.20) downstream to widening of creek (RM 3.10) near Indian River Road crossing.		Escherichia coli (E. coli)	2002	L	3.40

West Neck Creek - Middle

Recreation

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type: 3.40

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K41R-05-DO West Neck Creek - Middle

Cause Location: This cause encompasses the area from southside of Princess Anne road crossing (RM 6.20) downstream to

widening of creek (RM 3.10) approx. 0.55 mi downstream of Indian River Road crossing.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 4A

Aquatic Life Use is impaired for DO (12 obs / 33 obs) at DEQ station 5BWNC003.65. The high nutrient and total organic solids concentrations indicate that anthropogenic sources are exacerbating the naturally low DO conditions in the stream.

A Stressor Report was developed for the Dissolved Oxygen Assessment for Virginia Beach (Albemarle Canal/ North Landing River, Milldam Creek, West Neck Creek (middle), and Nawney Creek). EPA Approved letter for 4A classification, 12/14/2010. It was determined that the approved bacterial TMDL should significantly reduce organic matter and nutrients and thus a TMDL specifically addressing DO is not required. However, if conditions do not improve through implementation of the Bacteria TMDL consideration will be given to develop an additional TMDL for DO.

Cause Assessment Unit / Water Name / Location Desc. Cause Category Cause Name	Cycle First Listed	TMDL Dev. Priority	Water Size
VAT-K41R_WNC01A00 / West Neck Creek - Middle / Segment 4A Dissolved Oxygen from south side of Princess Anne Road crossing (RM 6.20) downstream to widening of creek (RM 3.10) near Indian River Road crossing.	2002	L	3.40

West Neck Creek - Middle

Aquatic Life

Dissolved Oxygen - Total Impaired Size by Water Type:

Reservoir (Sq. Miles)

(Acres)

River (Miles)

(Acres)

3.40

Sources:

Livestock (Grazing or Feeding Operations)

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed On-site Treatment Systems (Septic Systems and Similar Decentralized Systems) Urban Runoff/Storm Sewers

Chowan River and Dismal Swamp Basins

Cause Group Code: K41R-05-PCB West Neck Creek - Middle

Cause Location: This cause encompasses the area from southside of Princess Anne road crossing (RM 6.20) downstream to

widening of creek (RM 3.10) approx. 0.55 mi downstream of Indian River Road crossing.

City / County: Virginia Beach City

Use(s): Fish Consumption

Cause(s) / VA Category: PCBs in Fish Tissue / 5A

The Fish Consumption Use is impaired based on Fish Tissue data collected at Station 5BWNC003.65. 07-IM, FT_PCB White

Catfish, Carp & FT-OE, Met_As Carp.

Cycle TMDL
Cause
Cause
Assessment Unit / Water Name / Location Desc.
Category Cause Name
Cause First Dev. Water
Category Cause Name
Listed Priority Size
CAT-K41R WNC01A00 / West Neck Creek - Middle / Segment 5A PCBs in Fish Tissue
2010 L 3.40

VAT-K41R_WNC01A00 / West Neck Creek - Middle / Segment from south side of Princess Anne Road crossing (RM 6.20) downstream to widening of creek (RM 3.10) near Indian River Road crossing.

West Neck Creek - Middle

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

PCBs in Fish Tissue - Total Impaired Size by Water Type:

3.40

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K41R-08-BAC Blackwater Creek

Cause Location: This cause encompasses the area of Blackwater Creek from headwaters at RM 3.2 to confluence with North

Landing River RM 0.0.

City / County: Chesapeake City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

Recreation Use is not supported based on Ecoli data collected in the 2018 IR with 4 viol/ 32 obs at station 5BBKW002.50. This station was previously impaired in 2006 and 2008. Then in 2010 this station was delisted. From 2010 to 2016 this station was fully supporting Recreation Use with 2 viol / 34 obs in 2014 and 3 viol / 31 obs in 2016.

Cause Assessment Unit / Water Name / Location Desc. Cause Category Categor	Cycle First ause Name Liste	Dev. Water			
VAT-K41R_BKW01A00 / Blackwater Creek / Blackwater Creek from headwaters at RM 3.2 to confluence with North Landing River RM 0.0.	erichia coli (E. coli) 2006	S L 4.47			
Blackwater Creek Recreation		Reservoir River (Acres) (Miles)			
Escherichia coli (E. coli) - Total Impaired Size by Water Type: 4.4					

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K41R-09-BAC Pocaty River

Cause Location: This cause encompasses Pocaty River and selected tribs. from headwaters at mile 3.92 to confluence with North

Landing River at mile 0.00.

City / County: Chesapeake City Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

The Recreation Use is not supported based on data at Station 5BPCT001.79 with 5 viol / 32 obs.

A Total Maximum Daily Load has been developed for the Back Bay, North Landing River, and Pocaty River Watersheds for E. coli and Enterococci due to Recreation Use Impairments and Total Phosphorus due to Low Dissolved Oxygen in Aquatic Life Use impairments. EPA approved 12/11/2014.

Caus Assessment Unit / Water Name / Location Desc. Category	e Dry Cause Name	Cycle First Listed	TMDL Dev. Priority	Water Size
VAT-K41R_PCT01A02 / Pocaty River / Pocaty River and selected tribs. from headwaters at mile 3.92 to confluence with North Landing River at mile 0.00.	Escherichia coli (E. coli)	2012	L	7.43

Pocaty River		Estuary	Reservoir	River
Recreation		(Sq. Miles)	(Acres)	(Miles)
	Escherichia coli (E. coli) - Total Impaired Size by Water Type:			7.43

Sources:

Agriculture Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K41R-12-BEN Unnamed Trib to Milldam Creek

Cause Location: This cause encompasses the area from the confluence with Milldam Creek to Crags Cswy.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) / VA Category: Benthic Macroinvertebrates Bioassessments / 5A

Aquatic Life Use is not supported based on benthic data from Station 5BXAT000.30. Benthic IM [VI:S&F-09 & S-10; MI:F-10]

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Cycle TMDL First Dev. Listed Priority	Water Size
VAT-K41R_XAT01A12 / Unnamed Trib to Milldam Creek / From Confluence with Milldam Creek to Crags Cswy	5A Benthic Macroinvertebrates Bioassessments	2012 L	0.66
Unnamed Trib to Milldam Creek Aquatic Life	Estuary (Sq. Miles)	Reservoir (Acres)	River (Miles)
Benthic Macroinvertebrates Bioassessments - Total Ir	mpaired Size by Water Type:		0.66

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K41R-12-DO Unnamed Trib to Milldam Creek

Cause Location: This cause encompasses the area from the confluence with Milldam Creek to Crags Cswy.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5A

Aquatic Life Use is not supported based DO data from Station 5BXAT000.30, DO with 4 viol / 4 obs.

Cycle **TMDL** First Cause Dev. Water Priority Listed Size Assessment Unit / Water Name / Location Desc. Category Cause Name 2014 0.66 VAT-K41R_XAT01A12 / Unnamed Trib to Milldam Creek / From Dissolved Oxygen Confluence with Milldam Creek to Crags Cswy

Unnamed Trib to Milldam Creek

Aquatic Life

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type:

0.66

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K41R-14-BAC North Landing River - Middle

Cause Location: From confluence with Intracoastal Waterway (RM 13.65) downstream to instream Island (RM 12.01, upstream of

confluence of West Neck Creek).

City / County: Chesapeake City Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 4A

Recreation Use is impaired based on the E. coli data collected at Station 5BNLR013.61 (4 viol / 33 obs). This is the first E. coli impairment recorded since the development of the Bacteria TMDL for this applicable watershed. An E. coli impairment was recorded in the 2006 IR cycle prior to the development of a TMDL. Therefore, this AU is nested.

Assessment Unit / Water Name / Location Desc.

Cause
Category Cause Name

4A Escherichia coli (E. coli)

Cycle TMDL
First Dev. Water
Listed Priority Size
2006 L 2.15

Reservoir

Estuary

VAT-K41R_NLR02A06 / North Landing River - Middle / From confluence with Intracoastal Waterway (RM 13.65) downstream to instream Island (RM 12.01, upstream of confluence of West Neck Creek).

North Landing River - Middle

Recreation (Sq. Miles)

(Acres) (Miles) **2.15**

River

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

Sources:

Livestock (Grazing or Wildlife Other than

Feeding Operations) Waterfowl

Chowan River and Dismal Swamp Basins

Cause Group Code: K41R-15-BAC West Neck Creek - Lower

Cause Location: Segment and tribes. from widening of creek (RM 3.10) approx. 0.55 mi downstream of Indian River Road crossing

downstream to mouth (RM 0.0) at confluence with North Landing River.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Escherichia coli (E. coli) / 5A

E. coli is not supporting due to data collected at Station 5BWNC001.73 (4 viol / 32 obs).

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size
AT-K41R WNC02A04 / West Neck Creek - Lower / Segment 5A Escherichia coli (E. coli) 2006 L 6.11

VAT-K41R_WNC02A04 / West Neck Creek - Lower / Segment and tribes. from widening of creek (RM 3.10) approx. 0.55 mi downstream of Indian River Road crossing downstream to mouth (RM 0.0) at confluence with North Landing River.

West Neck Creek - Lower

Recreation

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Escherichia coli (E. coli) - Total Impaired Size by Water Type:

6.11

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K42E-01-BAC Nawney Creek - Upper

Cause Location: This cause encompasses the Upper portion of Nawney Creek, 0.8 mi. upstream of Nawney Creek Road bridge (RM

1.92) downstream 0.6 mi, from Nawney Creek Road bridge to RM 1.24.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Enterococcus / 4A

The Recreation Use is impaired based on Enterococci data that exceed the swimming criteria indicator with 10 violate/33 observations. A Bacterial TMDL was developed for the Virginia Beach Coastal Area (London Bridge Creek & Canal # 2. Milldam Creek, Tawney Creek, West Neck Creek (Middle), and West Neck Creek (Upper)) EPA approved 9/2005.

Assessment Unit / Water Name / Location Desc.

Category Cause Name

Enterococcus

Cycle **TMDL** First Dev. Water Listed **Priority** Size 2004 0.016

VAT-K42E NWN01A00 / Nawney Creek - Upper / Upper portion of 4A Nawney Creek, 0.8 mi, upstream of Nawney Creek Road bridge (RM 1.92) downstream 0.6 mi. from Nawney Creek Road bridge to RM 1.24.

Nawney Creek - Upper

Recreation

Estuary (Sq. Miles)

Reservoir (Acres)

River (Miles)

Enterococcus - Total Impaired Size by Water Type:

0.016

Sources:

Animal Feeding Operations

(NPS)

Crop Production (Crop Land

or Dry Land)

Livestock (Grazing or

Feeding Operations)

On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)

Runoff from

Forest/Grassland/Parkland

Waterfowl

Wildlife Other than Waterfowl

Final 2020

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Chowan River and Dismal Swamp Basins

Cause Group Code: K42E-01-DO Nawney Creek - Upper

Cause Location: This cause encompasses the Upper portion of Nawney Creek, 0.8 mi. upstream of Nawney Creek Road bridge (RM

1.92) downstream 0.6 mi, from Nawney Creek Road bridge to RM 1.24.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 4A

Aquatic Life Use impaired due to low dissolved oxygen concentrations below the criteria minimum (4.0 mg/l) in the headwaters of the segment. Station 5BNWN001.84 violates 13 out of 33 observations for DO, pH is supporting with 0 viol / 35 obs. High nutrients and organic solids concentrations are present in the stream, which are exacerbating the naturally low DO conditions. Therefore, impairment is a result of anthropogenic impacts. The implementation of the Bacteria TMDL approved in 2005 will improve excessive nutrients and organic solids concentrations. If conditions do not improve through implementation of the Bacteria TMDL consideration will be given to develop an additional TMDL for DO.

EPA understands DEQ intends to revise WQS for this stream in the next triennial review to reflect natural low DO conditions in this stream.

Dissolved Oxygen Assessment for Virginia Beach EPA approved 10/26/2010.

Assessment Unit / Water Name / Location Desc.

Cause Category Cause Name

Dissolved Oxygen

Cvcle **TMDL** First Dev. Water Listed Priority Size 2002 0.016

VAT-K42E_NWN01A00 / Nawney Creek - Upper / Upper portion of 4A Nawney Creek, 0.8 mi. upstream of Nawney Creek Road bridge (RM 1.92) downstream 0.6 mi. from Nawney Creek Road bridge to RM 1.24.

Nawney Creek - Upper

Aquatic Life

Estuary (Sq. Miles) Reservoir (Acres)

River (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type:

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0.016

Sources:

Livestock (Grazing or Feeding Operations)

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

On-site Treatment Systems (Septic Systems and Similar Decentralized Systems)

Runoff from

Forest/Grassland/Parkland

Urban Runoff/Storm Sewers

Chowan River and Dismal Swamp Basins

Cause Group Code: K42E-02-BAC Nawney Creek - Lower

Cause Location: This cause encompasses the lower portion of Nawney Creek, from 0.6 mi. downstream from Nawney Creek Road

bridge (RM 1.24) downstream to RM 0.00 (confluence with Redhead/Back Bav).

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Enterococcus / 4A

Recreation Use is not supported based on Enterococcus data (13 violations/ 34 observations) at DEQ station @

5BNWN000.00.

A Bacterial TMDL for the Virginia Beach Coastal Area (London Bridge Creek and Canal #2, Milldam Creek, Tawney Creek,

West Neck Creek (Middle), and West Neck Creek (Upper)) was approved on 09/27/2005.

Cycle **TMDL** First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size

VAT-K42E_NWN02A00 / Nawney Creek - Lower / Lower portion of 4A Enterococcus Nawney Creek, from 0.6 mi. downstream from Nawney Creek Road

bridge (RM 1.24) downstream to RM 0.00 (confluence with Redhead/Back Bay).

Nawney Creek - Lower Estuary Reservoir River (Sq. Miles) (Acres) (Miles) Recreation

> Enterococcus - Total Impaired Size by Water Type: 0.017

2006

0.017

Sources:

Crop Production (Crop Land Livestock (Grazing or **On-site Treatment Systems** Runoff from

Feeding Operations) (Septic Systems and Similar Forest/Grassland/Parkland or Dry Land)

Decentralized Systems)

Waterfowl Wildlife Other than Waterfowl

Chowan River and Dismal Swamp Basins

Cause Group Code: K42E-02-DO Nawney Creek - Lower

Cause Location: This cause encompasses the lower portion of Nawney Creek, from 0.6 mi. downstream from Nawney Creek Road

bridge (RM 1.24) downstream to RM 0.00 (confluence with Redhead/Back Bay).

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 4A

Aquatic Life Use impairment based on DO data violates 7 out of 33 observations at DEQ station @ 5BNWN000.00. High nutrients and organic solids concentrations are present in the stream, which are exacerbating the naturally low DO conditions. Therefore, impairment is a result of anthropogenic impacts. The implementation of the Bacteria TMDL approved in 2005 will improve excessive nutrients and organic solids concentrations. If conditions do not improve through implementation of the Bacteria TMDL consideration will be given to develop an additional TMDL for DO.

EPA understands DEQ intends to revise WQS for this stream in the next triennial review to reflect natural low DO conditions in this stream.

Dissolved Oxygen Assessment for Virginia Beach EPA approved 10/26/2010.

Cycle TMDL
Cause
Cause
Assessment Unit / Water Name / Location Desc.
Category Cause Name
Cause First Dev. Water
Category Cause Name
Listed Priority Size
CAT-K42E NWN02A00 / Nawney Creek - Lower / Lower portion of 4A Dissolved Oxygen
2008 L 0.017

VAT-K42E_NWN02A00 / Nawney Creek - Lower / Lower portion of 4A Dissolved Oxygen Nawney Creek, from 0.6 mi. downstream from Nawney Creek Road bridge (RM 1.24) downstream to RM 0.00 (confluence with Redhead/Back Bay).

Nawney Creek - Lower Estuary Reservoir River Aquatic Life (Sq. Miles) (Acres) (Miles)

Dissolved Oxygen - Total Impaired Size by Water Type: 0.017

Sources:

Natural Conditions - Water Quality Standards Use Attainability Analyses Needed

Chowan River and Dismal Swamp Basins

Cause Group Code: K42E-03-BAC Hell Point Creek - Lower (at mouth)

Cause Location: Located southwest of Sandbridge. Segment begins at intersection of creek and canal upstream of monitoring

station and ends at mouth, confluence with North Bay.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Enterococcus / 4A

The Recreation Use is not supporting due to Enterococci data (4 viol / 30 obs) collected at Station 5BHPC000.00.

Cycle TMDL
Cause Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

VAT-K42E_HPC02A04 / Hell Point Creek - Lower (at mouth) / 4A Enterococcus 2006 L 0.015

Located southwest of Sandbridge. Segment begins at intersection of creek and canal upstream of monitoring station and ends at mouth,

confluence with North Bay.

Hell Point Creek - Lower (at mouth)

Recreation

Reservoir River
(Sq. Miles) (Acres) (Miles)

Enterococcus - Total Impaired Size by Water Type: 0.015

Sources:

Livestock (Grazing or Wastes from Pets

Feeding Operations)

Chowan River and Dismal Swamp Basins

Cause Group Code: K42E-04-BAC Muddy Creek

Cause Location: This cause encompasses area at confluence with Ashville Bridge Creek and ends at the mouth, the confluence with

North Bay.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Enterococcus / 4A

The Recreation Use is impaired due to Enterococci bacteria concentrations exceeding the swimming criteria (8 viol /35 obs) at

DEQ station @ 5BMDY000.00.

A Total Maximum Daily Load has been developed for the Back Bay, North Landing River, and Pocaty River Watersheds for E. coli and Enterococci due to Recreation Use Impairments and Total Phosphorus due to Low Dissolved Oxygen in Aquatic Life

Use impairments. EPA approved 12/11/2014.

Assessment Unit / Water Name / Location Desc.

Cause Category Cause Name

Enterococcus

First Dev. Water Listed Priority Size 2004 L 0.026

TMDL

Cycle

VAT-K42E_MDY01A04 / Muddy Creek / Located southeast of Pungo. Segment begins at confluence with Ashville Bridge Creek and ends at the mouth, the confluence with North Bay

and ends at the mouth, the confluence with North Bay.

Estuary Reservoir River (Sq. Miles) (Acres) (Miles)

Enterococcus - Total Impaired Size by Water Type: 0.026

Sources:

Muddy Creek

Recreation

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K42E-05-BAC Beggars Bridge Creek

Cause Location: This cause encompasses the area southeast of Dawley Corners, tributary to Shipps Bay. Segment begins at the

confluence of numerous unnamed tributaries (RM 1.34) near Dawley Corners and extends downstream to the

mouth at the confluence with Shipps Bay.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Enterococcus / 4A

Recreation Use is impaired based on Enterococci data collected at station 5BBBC000.76 with 7 viol / 35 obs.

A Total Maximum Daily Load has been developed for the Back Bay, North Landing River, and Pocaty River Watersheds for E. coli and Enterococci due to Recreation Use Impairments and Total Phosphorus due to Low Dissolved Oxygen in Aquatic Life Use impairments. EPA approved 12/11/2014.

Assessment Unit / Water Name / Location Desc.

Cause Category Cause Name

Enterococcus

First Dev. Water Listed Priority Size 2004 L 0.042

Reservoir

(Acres)

River

(Miles)

TMDL

Cycle

Estuary

VAT-K42E_BBC01A04 / Beggars Bridge Creek / Located southeast of Dawley Corners, tributary to Shipps Bay. Segment begins at the confluence of numerous unnamed tributaries (RM 1.34) near Dawley Corners and extends downstream to the mouth at the confluence with Shipps Bay.

Beggars Bridge Creek

(Sq. Miles)

Enterococcus - Total Impaired Size by Water Type: 0.042

Sources:

Recreation

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K42E-06-BAC **Ashville Bridge Creek - Lower**

Cause Location: This cause encompasses the lower portion of Ashville Bridge Creek, between Hell Point and Muddy Creeks.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Enterococcus / 4A

Recreation Use is impaired based on 2 violates out of 10 observations for Enterococci data at station 5BASH002.20. This was last sampled in 2006, no new data therefore it is retained.

A Total Maximum Daily Load has been developed for the Back Bay, North Landing River, and Pocaty River Watersheds for E. coli and Enterococci due to Recreation Use Impairments and Total Phosphorus due to Low Dissolved Oxygen in Aquatic Life Use impairments. EPA approved 12/11/2014.

Ashville Bridge Creek - Lower		Estuary	Reservoir	River
VAT-K42E_ASH01A06 / Ashville Bridge Creek - Lower / Lower portion of Ashville Br. Cr., between Hell Point and Muddy Creeks.	4A Enterococcus	200)6 L	0.022
Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name	Fir	st Dev. ed Priority	Water Size

Recreation

(Sq. Miles) (Acres) (Miles)

Enterococcus - Total Impaired Size by Water Type: 0.022

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K42E-06-DO Ashville Bridge Creek - Lower

Cause Location: This cause encompasses the lower portion of Ashville Bridge Creek, between Hell Point and Muddy Creeks.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 4A

Aquatic Life Use is impaired due to low dissolved oxygen concentrations 2 exceedances / 15 observations below the criteria minimum (4.0 mg/l) at DEQ station @5BASH002.20.

Asheville Bridge has one permitted discharge- City of Virginia Beach MS4. Land Use is primarily crop, wetland and forest. Nutrient Monitoring data used in the TMDL exceed screening levels and are evidence of human impact to the stream. The phosphorus load reduction for Asheville Bridge is 34.59%.

A Total Maximum Daily Load has been developed for the Back Bay, North Landing River, and Pocaty River Watersheds for E. coli and Enterococci due to Recreation Use Impairments and Total Phosphorus due to Low Dissolved Oxygen in Aquatic Life Use impairments. EPA approved 12/11/2014.

Assessment Unit / Water Name / Location Desc.	Cause Category Cause Name		Cycle First Listed	TMDL Dev. Priority	Water Size
VAT-K42E_ASH01A06 / Ashville Bridge Creek - Lower / Lower portion of Ashville Br. Cr., between Hell Point and Muddy Creeks.	4A Dissolved Oxygen		2006	L	0.022
Ashville Bridge Creek - Lower Aquatic Life		Estuary (Sq. Miles)		servoir .cres)	River (Miles)
Dissolved Oxygen - Total	Impaired Size by Water Type:	0.022	2		
Sources:					

Contaminated Groundwater Municipal Point Source Non-Point Source Runoff from Forest/Grassland/Parkland

Chowan River and Dismal Swamp Basins

Cause Group Code: K42E-06-PH Ashville Bridge Creek - Lower

Cause Location: This cause encompasses the lower portion of Ashville Bridge Creek, between Hell Point and Muddy Creeks.

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) / VA Category: pH / 5C

Aquatic Life Use impairment based on pH will be retained in the 2018 IR. Data is from 2005-2006 with 1 viol / 15 obs. New data is needed to delist pH.

Asheville Bridge has one permitted discharge- City of Virginia Beach MS4. Land Use is primarily crop, wetland and forest. Nutrient Monitoring data used in the TMDL exceed screening levels and are evidence of human impact to the stream. The phosphorus load reduction for Asheville Bridge is 34.59%. The pH impairment was determined to be contributed by atmospheric deposition in the TMDL and will be addressed in a ecoregion/ statewide TMDL. The nutrient and bacteria TMDLs for Asheville Bridge will help eliminate pollutants that can also contribute to the low pH values.

A Total Maximum Daily Load has been developed for the Back Bay, North Landing River, and Pocaty River Watersheds for E. coli and Enterococci due to Recreation Use Impairments and Total Phosphorus due to Low Dissolved Oxygen in Aquatic Life Use impairments. EPA approved 12/11/2014.

Cause Cycle TMDL
Cause First Dev. Water
Assessment Unit / Water Name / Location Desc. Category Cause Name Listed Priority Size

AT-K42E ASH01A06 / Ashville Bridge Creek - Lower / Lower 5C pH 2010 L 0.022

VAT-K42E_ASH01A06 / Ashville Bridge Creek - Lower / Lower portion of Ashville Br. Cr., between Hell Point and Muddy Creeks.

Ashville Bridge Creek - Lower Estuary Reservoir River

Aquatic Life (Sq. Miles) (Acres) (Miles)

pH - Total Impaired Size by Water Type: **0.022**

Sources:

Atmospheric Deposition - Acidity

Chowan River and Dismal Swamp Basins

Cause Group Code: K42E-07-DO **Beggars Bridge Creek**

Cause Location: This cause encompasses the area located southeast of Dawley Corners, tributary to Shipps Bay. Segment begins

at the confluence of numerous unnamed tributaries (RM 1.34) near Dawley Corners and extends downstream to the

mouth at the confluence with Shipps

City / County: Virginia Beach City

Use(s): Aquatic Life

Cause(s) / VA Category: Dissolved Oxygen / 5A

Dissolved oxygen is impaired. 7 viol/33 obs at station 5BBBC000.76.

Assessment Unit / Water Name / Location Desc.

VAT-K42E_BBC01A04 / Beggars Bridge Creek / Located southeast of Dawley Corners, tributary to Shipps Bay, Segment begins at the confluence of numerous unnamed tributaries (RM 1.34) near Dawley Corners and extends downstream to the mouth at the

Cause Category Cause Name

Dissolved Oxygen

Cycle **TMDL** First Dev. Water Listed **Priority** Size

2010

Beggars Bridge Creek

confluence with Shipps Bay.

Aquatic Life

Estuary (Sq. Miles) Reservoir (Acres)

River (Miles)

0.042

Dissolved Oxygen - Total Impaired Size by Water Type: 0.042

Sources:

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K42E-10-BAC Hell Point Creek - Upper

Cause Location: This cause encompasses the area west of Sandbridge. Segment from headwaters downstream to RM 0.73,

intersection of creek with canal near mouth.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Enterococcus / 4A

The Recreation Use is not supported based on Enterococci bacteria data (8 violate / 34 obs.) at DEQ station @ 5BHPC001.46.

A Total Maximum Daily Load has been developed for the Back Bay, North Landing River, and Pocaty River Watersheds for E. coli and Enterococci due to Recreation Use Impairments and Total Phosphorus due to Low Dissolved Oxygen in Aquatic Life Use impairments. EPA approved 12/11/2014.

Cycle **TMDL** Cause First Dev. Water Assessment Unit / Water Name / Location Desc. Category Cause Name Listed **Priority** Size VAT-K42E_HPC01A00 / Hell Point Creek - Upper / Located west 2006 L 0.030 4A Enterococcus

of Sandbridge. Segment from headwaters downstream to RM 0.73, intersection of creek with canal near mouth.

Hell Point Creek - Upper

Recreation

Estuary Reservoir River
(Sq. Miles) (Acres) (Miles)

Enterococcus - Total Impaired Size by Water Type: 0.030

Sources:

Municipal Point Source So

Discharges

Source Unknown

Chowan River and Dismal Swamp Basins

Cause Group Code: K42E-12-BAC Lower Scopus Marsh

Cause Location: Tributary of Scopus March, west of Ocean Lakes High School southward to the north of Lago Mar Park.

City / County: Virginia Beach City

Use(s): Recreation

Cause(s) / VA Category: Enterococcus / 4A

The Recreation Use is not supporting due to impaired Enterococci data collected at Citizen Monitoring Stations 5SPS-OLABC1-VAMSC (2 viol / 2 obs), 5SPS-OLABC2-VAMSC (2 viol / 2 obs), and 5SPS-OLABC3-VAMSC (1 viol / 2 obs). This Assessment Unit falls within an existing TMDL for Enterococci.

Cycle TMDL

1.37

Assessment Unit / Water Name / Location Desc.	Cause Catego	e ry Cause Name	Fir List	st Dev. ed Priority	Water Size
VAT-K42R_SPS02A20 / Lower Scopus Marsh / Tributary of Scopus March, west of Ocean Lakes High School southward to th north of Lago Mar Park.	4A e	Enterococcus	202	20 L	1.37
Lower Scopus Marsh			Estuary	Reservoir	River
Recreation			(Sq. Miles)	(Acres)	(Miles)

Enterococcus - Total Impaired Size by Water Type:

Sources:

Agriculture Crop Production (Crop Land Residential Districts

or Dry Land)